

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

App. No. : 09/971,946 Confirmation No. 4092
Appellant : Jean-Patrick Azpitarte
Filed : October 4, 2001
TC/A.U. : 2152
Examiner : Dohm Chankong

Docket No. : 01-600
Customer No. : 34704

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

APPEAL BRIEF

Sir:

This is an appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 13 and 15 - 25, dated September 19, 2005, made by the Primary Examiner in Tech Center Art Unit 2152.

REAL PARTY IN INTEREST

The real party in interest is the Appellant Jean-Patrick Azpitarte.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant or Appellant's legal representative which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 13 and 15 - 25 stand rejected and are on appeal.
Claims 1 - 12 and 14 have been cancelled.

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A copy of claim 13 as amended by the Amendment being filed concurrently is included in Appendix A along with claims 15 - 25 on appeal.

STATUS OF AMENDMENTS

An amendment after final rejection was filed on January 18, 2006. In an advisory action mailed February 14, 2006, the Examiner indicated that the amendment after final rejection would be entered for the purposes of appeal.

While preparing the instant brief, an inadvertent typographical error in claim 13 was noted. Attached hereto is an amendment correcting this error.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a system (see FIG. 1) for remotely and automatically controlling, by a facilities management company, maintenance of facilities (33) by a maintenance company (1) with regards to a contract binding the maintenance company to the facilities management company. (See page 1, penultimate line, to page 2, line 2, of the specification.) The system comprises local monitoring units (31, 32) (see FIGS. 1 and 2 and page 6, line 11 et seq. of the specification). Each local monitoring unit (31, 32) is installed in close proximity to at least one piece of the facilities and associated thereto. (See page 2, lines 2 - 3 of the specification.) Each local monitoring unit (31, 32) comprises means (41 - 44) for measuring operation parameters of the associated piece of facilities for detecting an operational state thereof, control means (45) for allowing a maintenance technician to real time notify the start and end time of his maintenance or repair task performed on the associated piece of

facilities or to notify that the associated piece of facilities is out of order for a long period because works are in progress, which control means is independent from the operational state of the associated piece of facilities, a transmission network (10, 11), and means (47) for transmitting through said transmission network said detected operational state of said associated piece of facilities and said maintenance task start and end time, a first and a second computer (21, 22) with each said computer being connected to the local monitoring units through the transmission network (10, 11) and comprising means for receiving and processing the detected operational state and the maintenance task start and end times transmitted by the local monitoring units, and means for storing all information transmitted by the local monitoring units. The first computer (21) is available to the maintenance company (1) and is used to manage the maintenance of the facilities, and the second computer (22) is available to the facilities management company (2) and is used to automatically control the maintenance and repair tasks performed by the technicians of the maintenance company on the facilities with regard to their contractual obligations. (See FIGS. 1 and 2, also see page 5, line 18 to page 6, line 31 of the specification.)

As set forth in claim 15, each of the local monitoring units (31, 32) comprises means for preventing the local monitoring unit from transmitting through the transmission network information relating to the detected operational state of the associated piece of facilities between the start and end times of the maintenance, repair or works task signaled using the control means. (See page 2, lines 28 - 32 of the specification).

As set forth in claim 16, each of the first and second computers (21, 22) is connected to a data base collecting all information relating to the facilities and maintenance thereof, and the information transmitted by said local monitoring units. (See page 2, lines 33 - 35 of the specification.)

As set forth in claim 17, the first and second computers (21, 22) comprise means for counting a number of maintenance tasks carried out for each piece of the facilities during a first period of time, for comparing the maintenance task number to a first threshold, and for displaying a first maintenance fault signal if the maintenance task number does not reach the first threshold at the end of the first period of time, means for computing a total duration of the maintenance tasks performed on each piece of said facilities during a second period of time, for comparing said total duration to a second threshold, and for displaying a second maintenance fault signal if said total duration is not at least equal to said second threshold at the end of said second period of time, means for computing an elapsed time between a time when a piece of said facilities is detected as malfunctioning and the start time of a repair task on said piece of facilities, for comparing said elapsed time with a third threshold, and for displaying a third maintenance fault signal when said elapsed time exceeds said third threshold, and means for comparing a restart time to put a piece of said facilities to a normal operational state after the start time of a repair task on said piece of facilities with a fourth threshold, and for displaying a fourth maintenance fault signal when said restart time exceeds said fourth threshold. (See page 3, lines 2 - 21 of the specification.)

As set forth in claim 18, the second computer (22) comprises means for computing penalties to be applied to the

maintenance company if a maintenance fault concerning the exceeding of one of the four thresholds have been detected by the second computer. (See page 9, lines 9 - 16 of the specification and FIG. 4a; also see page 3, lines 26 - 29 of the specification).

As set forth in claim 19, the first and second thresholds are set as a function of the facilities. The third and fourth thresholds are defined as a function of the detected malfunction or type of repair. The thresholds are defined by a maintenance contract binding the maintenance company to the managing company. (See page 3, lines 30 - 34 of the specification.)

As set forth in claim 20, transmissions between the local monitoring units (32) and the first and second computers (21, 22) are carried out through a basic wire (10) or radio telephone (11) network. The local monitoring units (32) further comprises means (51 - 53) for setting up a link between the local monitoring units and the first and second computers through a radio telephone network, when the local monitoring units cannot access a basic telephone network. (See page 4, lines 21 - 28 of the specification; also see FIG. 2 and page 6, line 36 to page 7, line 11 of the specification).

As set forth in claim 21, at least one local monitoring unit (32) of a group of the local monitoring units which is installed close from one another comprises a data transmission unit. The data transmission unit comprises means (51 - 53) for transmission over the basic telephone network and means for transmission over the radio telephone network. (See FIG. 2 and page 4, lines 29 - 31 of the specification.) Other local monitoring units of the site comprise means for connection to the data transmission unit. (See page 4, lines 32 - 34 of the specification.)

As set forth in claim 22, the radio telephone network transmission means (52) in the data transmission unit (32) is provided with a backed-up power supply for sending a power supply fault message when the local monitoring unit is no longer powered. (See FIG. 2 and page 7, lines 12 - 19 of the specification.)

As set forth in claim 23, each of the local monitoring units (31, 32) comprises means for detecting internal faults pertaining to operation of the local monitoring unit, and means for sending malfunction information to a third computer if such internal faults are detected. The third computer (23) is connected to the local monitoring units through the transmission network and comprising means for receiving and processing and storing into a database the internal malfunction information transmitted by the local monitoring units. (See FIG. 1 and page 4, line 35 et seq. of the specification.)

As set forth in claim 24, each of the local monitoring units comprises means for starting a first timer (T_1) after a malfunction has been detected on the associated piece of facilities, means (41) for starting a second timer (T_2) if the first timer has timed out without the corresponding fault having disappeared, means (41) for sending a malfunction message to the first and second computers (21 and 22 or 23) if the second timer has timed out without the corresponding fault having disappeared, means for starting a third timer (T_3) after a fault has disappeared, and means (41) for transmitting a fault disappearance message if the third time has timed out without the corresponding fault reoccurring. (See FIGS. 3a - 3c and page 7, line 25 to page 8, line 21 of the specification.)

As set forth in claim 25, a respective duration for each of the first, second, and third timers is determined independently

from each other as a function of each malfunction type. (See page 12, lines 25 - 28 of the specification.)

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are as follows:

(1) The rejection of claims 13, and 15 - 19 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0172002 to Spira et al;

(2) the rejection of claims 20 and 21 under 35 U.S.C. 103(a) as being unpatentable over Spira et al. in view of U.S. Patent No. 6,437,692 to Petite;

(3) the rejection of claims 22 and 23 under 35 U.S.C. 103(a) as being unpatentable over Spira et al. and Petite and further in view of U.S. Patent No. 6,553,336 to Johnson et al.; and

(4) the rejection of claims 24 and 25 under 35 U.S.C. 103(a) as being unpatentable over Spira et al. in view of U.S. Patent No. 4,568,909 to Whynacht.

ARGUMENT

(A) All Pending Claims Are

Allowable Because Spira et al.

Is Not Available As A Reference

All of the rejections on appeal depend upon the availability of Spira et al. as a reference. In Appellant's opinion, Spira et al. is not entitled to the benefit of the filing date of the provisional application on which it is based and therefore is not available as a reference.

Appellant has claimed the benefit of a French priority application having a filing date of October 4, 2000. To perfect this priority, Applicant has submitted an English translation of the French priority document. The Spira et al. application has a filing date of March 15, 2001. It claims the benefit of a provisional application; however, the provisional application does not comply with the requirements of 35 U.S.C. 112, first paragraph. The provisional application consists of two pages of text, a number of marketing or promotional brochures, some of which are in German, an overview of the brochures, and a print out of slides of a PowerPoint presentation. In its totality, the provisional application would not enable one of ordinary skill in the art to produce the disclosed and/or claimed Spira et al. invention without undue experimentation. It is further believed that the Spira et al. provisional patent application does not meet the written description or best mode requirements of 35 U.S.C. 112, first paragraph. Thus the Spira et al. patent application is only entitled to its actual filing date, which is after Applicant's effective filing date (the date of Applicant's priority application). Thus, Spira et al. is not available as a reference and the rejection(s) based upon Spira et al. fail.

In the advisory action mailed February 14, 2006, the Examiner takes the position that Spira et al.'s provisional application satisfies the written description requirement. Appellant disagrees. The function of the written description requirement is to ensure that the inventor had possession, as of the filing date of the application, of the specific subject matter later claimed by him. See *in re Wertheim*, 541 F.2d 257, 262 (CCPA 1976). The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the

artisan that the inventor had possession of the later claimed subject matter at the time of filing of the application, rather than the presence or absence of literal support in the specification for the claim language. See *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983).

The Examiner's analysis in the advisory action falls short of that which is required because the Examiner has not determined that the subject matter of all the claims in the published Spira et al. application were in the inventor's possession at the time that the Spira et al. provisional application was filed. For example, claim 1 of the Spira et al. published patent application calls for customer related technical services for obtaining an optimal financial result of a production plant by continuously applying the steps of: providing a process description; utilizing connected software tools and hardware tools, and consulting an empirical database of experience. Appellant can not find any support for this claim in the subject matter of the provisional patent application. Nowhere is there any description of a process for obtaining an optimal financial result of a production plant by applying the steps set forth in claim 1. Similarly, there is no written description in the provisional patent application which would support claims 2 24 and 27 - 50.

With regard to claim 51 in the Spira et al. published patent application, the provisional patent application does not discuss providing a manual of operating principles common to all plants and providing farther information of operating principles common to all plants of a type of plant.

Thus, the provisional patent application in Spira et al. does not have a written description which supports all the claims in the published Spira et al. patent application. For

this reason alone, the Spira et al. published patent application is not entitled to the filing date of the provisional Spira et al. application.

With regard to the invention which is being claimed by Appellant, there is no disclosure in the Spira et al. provisional patent application of the claimed local monitoring units, the claimed control means, the claimed first and second computers connected to the local monitoring units, and the claimed storing means. Since this claimed subject matter can not be found in the Spira et al. provisional patent application, it can not be said that Spira et al. was in possession of the subject matter of claim 13, or any of the other claims on appeal, as of the filing date of the provisional patent application. Thus, Spira et al. provisional patent application would not meet the written description requirement as to the subject matter being claimed by Appellant. Thus, the Examiner is not entitled to rely upon the filing date of the provisional patent application and the Spira et al. published patent application should be removed as a reference.

With respect to the same claims in the Spira et al. published patent application, the Spira et al. provisional patent application also does not meet enablement or best mode requirements of 35 U.S.C. 112, first paragraph. Spira et al.'s provisional patent application is not sufficiently enabling to one of ordinary skill in the art to make and use the invention set forth in claims 2 - 24 and 27 - 51 without undue experimentation because it provides absolutely no guidance as to how to perform the subject matter of the claims. As for the best mode requirement, Spira et al.'s provisional patent application does not provide any mode for performing the subject matter of

claims 2 - 24 and 27 - 51 of the Spira et al. published patent application.

With respect to the subject matter of the claims on appeal, for the reasons discussed above, it can not be said that the subject matter of the claims on appeal is enabled by the Spira et al. provisional patent application. There is absolutely nothing in the Spira et al. provisional patent application which provides any guidance as to how one of ordinary skill in the art could arrive at the claimed subject matter or how to make and use the claimed invention. In Appellant's opinion, significant undue experimentation would have to be performed to arrive at the claimed invention using the disclosure in the Spira et al. provisional patent application. As for the best mode requirement, Spira et al.'s provisional patent application does not set forth any mode for performing the claimed invention. There is no discussion of the claimed local monitoring units, the claimed control means, the claimed first and second computers connected to the local monitoring units, and the claimed storing means.

The disclosure in the Spira et al. provisional patent application is a broad base description of a modular system for performing maintenance. It lacks the details sufficient to show that Spira et al. possessed the subject matter of each of claims 13 and 15 - 25 on appeal and/or had a disclosure which enabled and/or described a best mode for arriving at the subject matter of each of claims 13 and 15 - 25. Therefore, the Examiner is not entitled to rely upon the filing date of the Spira et al. provisional patent application. Since the Examiner is not entitled to rely upon this date, the Spira et al. published patent application is not available as a reference since Appellant has an earlier effective filing date by virtue of his

foreign priority. Since Spira et al. is not available as a reference, all of the rejections of record fail and all pending claims on appeal should be allowed.

*(B) Claims 13 and 15 - 19 Are
Not Obvious Over Spira et al.*

The object of the invention set forth in claim 13, as well as in dependent claims 15 - 19 is to make data available about the maintenance or repair tasks performed by a maintenance company on facilities such as electromechanical facilities (elevators, automatic doors or gates, ventilation systems, HVAC or heating systems), in order to automatically control maintenance and repair of facilities by a maintenance company with regards to the contract binding the maintenance company to the facilities management company.

To this purpose, the claimed invention includes local monitoring units each being installed in the vicinity of and attached to one respective monitored machine and being provided with control means, independent from the operational state of the monitored machine, for acquiring a start and end time of each maintenance or repair task performed by a maintenance technician on the associated machine. This maintenance information, and other information about the operational status of the associated machine, is transmitted to central computers which store the received information in a central database. The maintenance and operational state information is analyzed by one central computer in order to determine if the maintenance or repair tasks performed by the maintenance technicians satisfies the contractual obligations of the maintenance company.

The system as claimed allows the facilities management company to **automatically and in real time** control that the response times for repairing a facility or the frequency with which maintenance operations are performed, *which are specified in the maintenance contract*, are complied with by the maintenance company. In addition, if the contract provides for specific servicing or restarting time according to failure type, the claimed system allows to automatically and in real time control that these times are respected.

The present invention describes specific means allowing a facilities management company to automatically and in real time control maintenance of facilities by a maintenance company with regards to the contract binding the maintenance company to the facilities management company. Notably, the operation allowed by the system of the present invention is based on the claimed control means of the local monitoring units for allowing a maintenance technician to real time notify the start and end time of his maintenance or repair task, which control means being independent from the operational state of the associated piece of facilities.

An objective reading of Spira et al. shows that Spira et al. do not teach or suggest the system as set forth in the claims. Spira et al. does not teach or suggest a system comprising local units installed near machines to be monitored and comprising means for performing a diagnostic of the condition of the machine, and transmitting the diagnostic information via a network. The Examiner makes reference to "integrated sensors which are used to collect measurements continuously during operation ...", but does not say where the reference teaches or suggests connecting these sensors to any local monitoring unit which comprises in combination means for

measuring operation parameters of the associated piece of facilities, means for being connected to a transmission network, means for transmitting through the transmission network the detected operational state of the associated piece of facilities, and control means for allowing a maintenance technician to real time notify the start and end time of his maintenance task performed on the associated piece of facilities. One of ordinary skill in the art reading the Spira et al. reference would not find such a local monitoring unit having such a combination of elements.

It is submitted that the Examiner's interpretation of Spira et al. is unduly strained. In fact, the Examiner merely isolates some elements of Spira et al., taking them independently of the context from which they function in the Spira et al. system, and combines them artificially in an effort to meet the limitations of the claims. In other words, the Examiner's rejection is nothing more than an attempted hindsight reconstruction of the claimed invention.

According to the claimed invention, the local monitoring units are designed for allowing a maintenance technician to real time signal the beginning and end of his servicing on the facility, which information is transmitted to the maintenance and manager companies' computers. Spira et al. does not teach or suggest such functionality. In fact, Spira et al. can not implement such a real time transmission. Recognizing this, the Examiner states that there is an implied ability to track the start and end time of the work as well as the repair tasks performed during the maintenance by the repairman. Yet, Spira et al. never says that such an ability exists. As noted by the Examiner, there is no disclosure of any means, much less the claimed means, for allowing a maintenance technician to real-

time notify the start and the end time of the maintenance. Since there is no disclosure of such means and since there is no recognition in Spira et al. of real time notification, there is nothing in the cited and applied prior art which would motivate one of ordinary skill in the art to modify Spira et al. to provide such a capability. For this reason alone, claim 13 is allowable over the cited and applied prior art.

Concerning point 4 of the Advisory Action, where the Examiner uses the disclosure of Spira et al. (paragraph 0022) about the software modules, Appellant maintains that the software modules of Spira et al. are not at all similar to the local monitoring units of the invention.

Indeed, in Spira et al., the software modules are dedicated to allow a technician to keyboard data about the general operation of the plant. The captures by the technician are moreover not real time but performed in deferred time. Also, there is no stamping of the arrivals and departures of the technicians, but only a capture of their hourly charging in order to calculate the associated costs.

By contrast, in the present invention, the local monitoring units are automatic devices allowing to real time detect the operating faults of the associated piece of facilities and also to real time store and transmit the start and the end time of the maintenance or repair tasks performed by the technician.

Moreover, concerning the claimed local monitoring units associated to each facility to be monitored, the Examiner makes reference to "integrated sensors" cited in Spira et al.

(paragraph 0354) to conclude that the claimed local monitoring units would be anticipated. Then, the Examiner seems to assert that the local monitoring units of the invention would be nothing than classical sensors, like the sensors effectively

disclosed in Spira et al., which are presented as ordinary sensors, classically used to collect measurements continuously during operation. But the Examiner misreads the limitations regarding the claimed local monitoring units.

Indeed, the local monitoring units of the invention comprises in combination means for measuring operation parameters of the associated piece of facilities, means for being connected to a transmission network, means for transmitting through the transmission network the detected operational state of the associated piece of facilities, and control means for allowing a maintenance technician to real time notify the start and end time of his maintenance task performed on the associated piece of facilities. This is what can not be found in Spira et al.

Appellant submits that it is not appropriate for the Examiner to try and reduce the claimed local monitoring units of the invention to classical sensors and to merely say that the fundamental and essential functionality of monitoring units of the invention allowing a maintenance technician to real time notify the start and end time of his maintenance or repair task and then allowing a facilities management company to automatically control maintenance of facilities by a maintenance company with regards to the maintenance contract, is an implicit functionality of Spira et al.

Concerning this last point set forth in paragraph 5 of the Advisory Action, Appellant notes that Spira et al. never says that such functionality exists in the maintenance services disclosed.

About this and according to the Examiner, Spira et al. merely indicates that *the contract pricing is linked to performance by the maintenance company.*

But in fact, the mentioned contract in Spira et al. is more precisely a contract defining maintenance cost objectives, said maintenance being provided to be overall realized for a plant or a set of plants. When Spira talks about contract, it is never described or suggested precise contractual objectives about maintenance like in the present invention, such as:

- an elapsed time between a time when a piece of facilities is detected as malfunctioning and the start time of the repair task,
- a restart time to put a piece of facilities to a normal operational state after the start time of a repair task,
- a number of maintenance tasks, and
- a total duration of the maintenance tasks.

It is precisely the aim of the present invention to provide a system able to automatically control such maintenance objectives explicitly mentioned in the contract binding the maintenance company to the facilities management company. To this aim, the control means allowing a technician to real time notify the start and end time of his maintenance or repair task are essential means to automatically compare the practical results with the objectives mentioned in the maintenance contract.

Moreover, even if one presumes, as the Examiner, that the maintenance services according to Spira et al. are effectively monitored to insure that the maintenance company is living up to their end of the contract, there is no disclosure in Spira et al. of any means indicating how the maintenance services are concretely monitored, and thus no disclosure concerning the ability to automatically and real time follow the good execution of the contract binding the maintenance company to the facilities management company.

On the contrary, in the Spira et al. disclosure, it is explicitly suggested about the possibility to monitor the maintenance services with the intervention of a third party to validate the scheduled reviews (see the passage 0155 cited by the Examiner in paragraph 5 of the Advisory Action).

Spira et al. suggests the opposite of the present invention, which claims on the contrary an automatic control of the execution of the maintenance and repair tasks performed by the technicians of the maintenance company on the facilities with regards to their contractual obligations. So, the intervention of a third party to this aim is clearly incompatible with an automatic control as claimed. The argumentation of the Examiner on this point is then inconsistent.

In conclusion, the Examiner's interpretation of the Spira et al. published patent application is nothing more than an attempted hindsight reconstruction of the claimed invention.

With regard to the rejection of claim 15, the Examiner contends that the functionality to prevent transmissions of malfunctions during an inspection is well known in the art. Yet the Examiner cites no secondary reference to establish this point. Appellant has requested that the Examiner cite a reference teaching or suggesting this functionality and explain why one of ordinary skill in the art would be motivated to provide such functionality to the system of Spira et al. This request has gone unanswered. The mere fact that something exists in the prior art is not a sufficient basis to establish a prima facie case of obviousness. Further, the rejection makes reference to Reid's maintenance system; however, the Examiner has cited no reference to any Reid maintenance system. In the advisory action, the Examiner contends that the functionality of

claim 15 is met by the on/off switch of a computer. However, it is not clear to Appellant, how the on/off switch of a computer would comprise a local monitoring unit having the claimed preventing means.

With regard to claim 16, the Examiner has not addressed where in Spira et al. can find first and second computers connected to both a data base collecting all information and the information transmitted by the local monitoring units.

With regard to claim 17, thanks to the functionality of the local monitoring units of the invention allowing a maintenance technician to real time notify the start and end time of his maintenance or repair task, in combination with the other claimed features, notably the computer available to the facilities management company, comprising means for receiving and processing the detected operational state and maintenance task start and end times transmitted by the local monitoring units, it is possible to:

- obtain an evaluation of the number of maintenance operation, and more precisely:
- to automatically calculate and display the number of maintenance operation carried out for each monitored facility during a predetermined period of time,
- to automatically comparing said number to a predetermined number defined in the maintenance contract binding the maintenance company to the managing company, and
- to automatically display a maintenance fault signal and calculate penalties if the number of maintenance operations does not reach the predetermined number at the end of said predetermined period of time.
- obtain an evaluation of duration of time spent on maintenance operations, and more precisely:

- to automatically calculate and display the total duration of maintenance operations carried out for each monitored facility during a predetermined duration of time,
- to automatically compare said total duration to the predetermined duration in the maintenance contract binding the maintenance company to the managing company, and
- to automatically display a maintenance fault signal and calculate penalties if the total duration of maintenance operations does not reach the predetermined duration at the end of said predetermined period of time.
- obtain an evaluation of total time elapses between beginning of malfunction and start of technician's work, and more precisely:
 - to automatically calculate and display the elapsed time between the beginning of a monitored facility malfunction and the start of technician's work,
 - to automatically compare said elapsed time to the predetermined time defined in the maintenance contract binding the maintenance company to the managing company, and
 - to automatically display a fault signal and calculate penalties if said elapsed time exceeds said predetermined time.
- obtain an evaluation of the duration to return facility to its normal operational state, and more precisely:
 - to automatically calculate and display the time elapsed between the start of the maintenance task and the return to a normal operational state of a monitored facility,
 - to automatically compare said elapsed time to the predetermined time defined in the maintenance contract

binding the maintenance company to the managing company,
and

- to automatically display a fault signal and calculate penalties if said elapsed time exceeds said predetermined time.

About this set of features, the Examiner merely points out the paragraph 0302 of Spira et al. and concludes that the claimed subject matter is present. Paragraph 0302 says: "An on-line service provides direct help through specialists communicating directly with the technical plants via telephone and data networks or satellite links. Detection of faults is possible in the shortest time and location of the faults is provided. In one example, software faults are cured by interactive transfer of programs and data." In fact, this paragraph is very far from the fault signalization according to claim 17. The cited portion of Spira et al. concerns the maintenance of software modules described in Spira et al. to implement the proposed maintenance services. Therefore, the cited portions in Spira et al. do not support the Examiner's contention and is clearly not related at all to the concerned features.

Claim 18 is allowable for the same reasons as claim 17. There is no explicit disclosure in Spira et al. of the claimed subject matter. Using performance indicators to evaluate effectiveness of the maintenance can mean many things. It is not a disclosure of a second computer having means for automatically computing penalties to be applied to the maintenance company if a maintenance fault concerning the exceeding of one of four thresholds has been detected by the second computer.

Claim 19 is allowable for the same reasons as claim 13 as well as on its own accord. There is no disclosure in Spira et

al. of setting a pair of thresholds as a function of the facilities and setting a second pair of thresholds as a function of the detected malfunction or type of repair.

Once again, objectively, there is no explicit disclosure in Spira et al. of the ability to real time notify start and end time of maintenance tasks, allowing to automatically calculate specific parameters as the number of maintenance tasks carried out for each piece of facilities during a period of time, the total duration of the maintenance tasks performed on each piece of facilities during a period of time, the elapsed time between a time when a piece of facilities is detected as malfunctioning and the start time of a repair task, and the elapsed time between the start time of the maintenance task and the return to a normal operational state, the objective being to automatically compare these parameters to predetermined parameters specified in the contract binding the maintenance company to the facilities management company.

For the foregoing reasons, it is believed that the invention of claims 13 and 15 - 19 would not be obvious to a person skilled in the art from a reading of Spira et al. and thus these claims involve an unobvious inventive step.

*(C) Claims 20 and 21 Are
Allowable Over the Combination
Of Spira et al. and Petite*

At a minimum, claims 20 and 21 are allowable for the same reasons as claim 13. The Petite patent does not cure the aforementioned deficiencies of Spira et al.

Petite is cited as showing a radio telephone network as a back-up link. The Examiner concludes that it would have been

obvious to have incorporated Petite's back-up links into Spira et al. The problem with this modification is that Spira et al. lacks the claimed local monitoring units and the first and second computers. Petite does not cure this deficiency in Spira et al. For this reason, claim 20 is allowable.

Claim 21 is allowable because neither of the cited and applied references teaches or suggests a local monitoring unit comprising a data transmission unit having means for transmission over the basic telephone network as well as means for transmission over the radio telephone network. Further, neither reference has other local monitoring units comprising means for connection to the data transmission unit.

*(D) Claims 22 and 23 Are Allowable
Over The Combination of Spira
et al., Petite and Johnson*

At a minimum, claims 22 and 23 are allowable for the same reasons as their parent claims.

The Johnson patent is relied upon by the Examiner for its showing of a back-up power supply. In particular, the Examiner relies upon column 15, lines 47 - 53, of Johnson. A review of this section shows that it refers to a transducer control module which monitors the primary power source of the asset. If the power source fails, the control module includes an internal battery backup to transmit a power fail report to the monitoring system. It is submitted that claim 22 is allowable because there is nothing in Johnson which teaches or suggests providing the radio telephone network transmission mean in the data transmission unit with a back-ed up power supply for sending a power supply fault message when the local monitoring unit is no

longer powered. Thus, there is no teaching or suggestion in any of the references of the claimed subject matter of claim 22.

With regard to claim 23, this claim is allowable because none of the cited and applied references teaches or suggests a local monitoring unit comprising means for detecting internal faults pertaining to the operation of the local monitoring unit and means for sending malfunction information to a third computer. Nor is there any disclosure of a third computer being connected to the local monitoring units. The Examiner offers no reason why one of ordinary skill in the art would be motivated to add a third computer to Spira et al. and why one of ordinary skill in the art would be motivated to send malfunction information to a third computer. Appellant agrees that the ability for a maintenance company to monitor the local monitoring units provides a benefit. However, none of the cited and applied references suggest this. Even if they did, there is nothing in any of the cited and applied references which would lead one to send the malfunction information to a third computer which comprises a means for receiving and processing and storing into a database the internal malfunction information transmitted by the local monitoring units. Johnson does not teach monitoring any internal fault of the operation of a local monitoring unit.

*(E) Claims 24 and 25 Are Allowable
Over The Combination of Spira
et al. and Whynacht*

At a minimum, claims 24 and 25 are allowable for the same reasons as their parent claims. Whynacht does not cure the aforementioned deficiencies of Spira et al.

Claim 24 is allowable because neither of the cited references, taken alone or in combination with each other, teaches or suggests all the means set forth in claim 24. In particular, the Whynacht reference does not teach or suggest any means for sending a malfunction message to first and second computers if the second timer has timed out without the corresponding fault having disappeared. To show this feature, the Examiner relies upon column 22, lines 10 - 15 of Whynacht. A review of this portion however shows that it refers to what the Examiner has called the first timer, not the second timer. Certainly, there is nothing in this portion which teaches sending the malfunction message to more than one computer.

Claim 25 is allowable because there is nothing in either of the cited and applied references which teaches or suggests determining the duration for each of the timers independently from each other as a function of malfunction type. While the timers in Whynacht may have different durations, the reference is silent as to how these durations are arrived at.

CONCLUSION

For the foregoing reasons, the Board is hereby requested to reverse the rejections of record and remand the instant application back to the Primary Examiner for allowance.


EXTENSION OF TIME AND APPEAL BRIEF FEE

A request for a one month extension of time is enclosed herewith. Also enclosed is a check in the amount of \$310.00 to cover the cost of the one month extension of time and the Appeal Brief fees.

Should the Director determine that an additional fee is due, he is hereby authorized to charge said additional fee to Deposit Account No. 02-0184.

Respectfully submitted,

Jean-Patrick Azpitarte

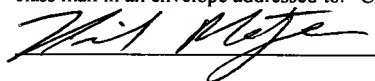
By 
Barry L. Kelmachter
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Attorney for Appellant

Telephone: (203)777-6628 ext. 112
Telefax: (203)865-0297
Email: docket@bachlap.com

IN TRIPLICATE

Date: April 20, 2006

I, Nicole Motzer, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on April 20, 2006.



CLAIMS ON APPEAL - APPENDIX A

13. A system for remotely and automatically controlling, by a facilities management company, maintenance of facilities by a maintenance company with regards to a contract binding the maintenance company to the facilities management company, said system comprising:

local monitoring units, each local monitoring unit being installed in close proximity to at least one piece of said facilities and associated thereto, each local monitoring unit comprising:

means for measuring operation parameters of the associated piece of facilities for detecting an operational state thereof;

control means for allowing a maintenance technician to real time notify the start and the end time of his maintenance or repair task performed on the associated piece of facilities or to notify that the associated piece of facilities is out of order for a long period because works are in progress, said control means being independent from the operational state of the associated piece of facilities,

a transmission network, and

means for transmitting through said transmission network said detected operational state of said associated piece of facilities and said maintenance task start and end times;

a first and a second computer, each computer being connected to the local monitoring units through said transmission network and comprising means for receiving and processing said detected operational state and said maintenance task start and end times transmitted by the local monitoring units, and

means for storing all information transmitted by the local monitoring units, said first computer being available to the maintenance company and being used to manage the maintenance of said facilities, and said second computer being available to the facilities management company and ~~is~~ being used to automatically control the maintenance and repair tasks performed by the technicians of said maintenance company on said facilities with regards to their contractual obligations.

15. The system according to claim 13, wherein each of said local monitoring units comprises means for preventing the local monitoring unit from transmitting through said transmission network information relating to the detected operational state of the associated piece of facilities between said start and end times of said maintenance, repair or works task signaled using said control means.

16. The system according to claim 13, wherein each of said first and second computers is connected to a data base collecting all information relating to the facilities and the maintenance thereof, and the information transmitted by said local monitoring units.

17. The system according to claim 13, wherein the first and second computers comprise:

means for counting a number of maintenance tasks carried out for each piece of said facilities during a first period of time, for comparing said maintenance task number to a first threshold, and for displaying a first maintenance fault signal if the maintenance task number does not reach said first threshold at the end of said first period of time;

means for computing a total duration of the maintenance tasks performed on each piece of said facilities during a second period of time, for comparing said total duration to a second threshold, and for displaying a second maintenance fault signal if said total duration is not at least equal to said second threshold at the end of said second period of time;

means for computing an elapsed time between a time when a piece of said facilities is detected as malfunctioning and the start time of a repair task on said piece of facilities, for comparing said elapsed time with a third threshold, and for displaying a third maintenance fault signal when said elapsed time exceeds said third threshold; and

means for comparing a restart time to put a piece of said facilities to a normal operational state after the start time of a repair task on said piece of facilities with a fourth threshold, and for displaying a fourth maintenance fault signal when said restart time exceeds said fourth threshold.

18. The system according to claim 17, wherein the second computer comprises means for computing penalties to be applied to the maintenance company if a maintenance fault concerning the exceeding of one of the four said thresholds have been detected by said second computer.

19. The system according to claim 17, wherein the first and second thresholds are set as a function of said facilities, and wherein the third and fourth thresholds are defined as a function of the detected malfunction or type of repair, said thresholds being as defined by a maintenance contract binding the maintenance company to the managing company.

20. The system according to claim 13, wherein transmissions between the local monitoring units and the first and second computers are carried out through a basic wire or radio telephone network and wherein the local monitoring units further comprise means for setting-up a link between the local monitoring units and the first and second computers through a radio telephone network, when the local monitoring units cannot access a basic telephone network.

21. The system according to claim 20, wherein at least one local monitoring unit of a group of said local monitoring units which are installed close from one another comprises a data transmission unit, wherein said data transmission unit comprises means for transmission over the basic telephone network and means for transmission over the radio telephone network, and wherein other local monitoring units of the site comprising means for connection to said data transmission unit.

22. The system according to claim 21, wherein the radio telephone network transmission means in the data transmission unit are provided with a backed-up power supply for sending a power supply fault message when the local monitoring unit is no longer powered.

23. The system according to claim 13, wherein each of said local monitoring units comprises means for detecting internal faults pertaining to operation of said local monitoring unit, and means for sending malfunction information to a third computer if such internal faults are detected, said third computer being connected to the local monitoring units through said transmission network and comprising means for receiving and

processing and storing into a database the internal malfunction information transmitted by the local monitoring units.

24. The system according to claim 13, wherein each of said local monitoring units comprises:

- means for starting a first timer after a malfunction has been detected on the associated piece of facilities;

- means for starting a second timer if the first timer has timed out without the corresponding fault having disappeared;

- means for sending a malfunction message to the first and second computers if the second timer has timed out without the corresponding fault having disappeared;

- means for starting a third timer after a fault has disappeared; and

- means for transmitting a fault disappearance message if the third timer has timed out without the corresponding fault reoccurring.

25. The system according to claim 24, wherein a respective duration for each of the first, second and third timers is determined independently from each other as a function of each malfunction type.

EVIDENCE - APPENDIX B

03/17/00

84 U.S. PTO

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (b)(2).

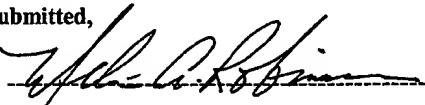
Docket Number		P00,0520		Type a plus sign (+) inside this box →		+	
INVENTOR(s)/APPLICANT(s)							
LAST NAME		FIRST NAME		MIDDLE INITIAL		RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)	
SPIRA STUEBIGER		Mario Juergen		Cosmas		Erlangen, GERMANY Erlangen, GERMANY	
TITLE OF THE INVENTION (280 characters max)							
"METHOD FOR PROVIDING MAINTENANCE SERVICES"							
CORRESPONDENCE ADDRESS							
HILL & SIMPSON 233 South Wacker Drive, 85th Floor Sears Tower Chicago							
STATE		Illinois		ZIP CODE		COUNTRY	
				60606		USA	
ENCLOSED APPLICATION PARTS (check all that apply)							
<input checked="" type="checkbox"/> Specification Number of Pages 11 <input type="checkbox"/> Small Entity Statement							
<input type="checkbox"/> Drawing(s) Number of Sheets _____ <input checked="" type="checkbox"/> Other (specify) Attached Documents (13 sets)							
METHOD OF PAYMENT (check one)							
<input checked="" type="checkbox"/> A check or money order is enclosed to cover the Provisional filing fees							
<input type="checkbox"/> The Commissioner is hereby authorized to charge							
filing fees and credit Deposit Account Number: _____						PROVISIONAL FILING FEE AMOUNT (\$)	
						\$ 150.00	

This invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.☐ Yes, the name of the U.S. Government agency and the Government contract number are _____

Respectfully submitted,

SIGNATURE



Date March 17, 2000

TYPED or PRINTED NAME Melvin A. Robinson

REGISTRATION NO. (if appropriate) 31,870

☐ Additional inventors are being named on separately numbered sheets attached here to

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

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BOX Provisional Application
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Washington, D.C. 20231

Case Number: P00,0520

Inventors: Mario Cosmas SPIRA et al.

Patent Application entitled:

"METHOD FOR PROVIDING MAINTENANCE SERVICES"

Signature of person mailing documents and fee

S. P. Henning

Method for Providing Maintenance Services

The present invention relates generally to a modular system of providing technical services. In the present system, a customer desiring maintenance services or technical services is provided a menu of available technical services from which to select desired technical services. A uniform service architecture is provided. Modules are provided at various business levels are provided, from the general to the specific. In one embodiment, three levels are provided.

Electronic system plans are employed, potentially based on CAD data, electronic handbooks, Excel lists and a standard organization software CMNS, Computerized Management Systems. This software is respectively employed for a location of a specific customer. An Enterprise Asset Management System (EAMS) is utilized between the individual locations, and the Enterprise Resource Planning System is located over the whole thing, this running, for example, on the basis of SAP program technology. The individual programs run on a Unix or Windows NT basis; they are implemented either in the computer system of the customer system or on servers of the respective Siemens Customer Service Center. However, a monitoring in the respective Siemens Customer Service Center is always a feature, this center being respectively in charge in a country or internationally as well, for example USA and Canada. Communication via Internet with special measures for secure transmission.

The present invention provides outsourced maintenance as a part of a business strategy. The outsourced maintenance includes plant design and construction, plant operation, and plant taking out of service and tear-down. The maintenance services offered also fall into the broad areas of technical services, consulting, repair service, parts supply, etc. The customer needs are evaluated and the customer is offered the services as modules selected from a menu. The

modules, which are implemented through software modules and hardware, are installed at a local level in each plant. However, operation and control of the service is provided through regional facilities that are linked to the local facilities by a communication connection, such as through the Internet. The regional facilities are provided at regions of the globe so as to offer 24 hour support to the local service locations, including providing a regional center in the Far East, one in the European Union, and one in a NAFTA country. One of these regional centers are open during business hours at any time of the day to provide support for the local service locations. The regional centers are in turn connected via communication link to a single world-wide headquarters.

Decisions on maintenance services are divided between the global, regional or local level. Business strategy for the customer, choices of modules to use, etc. are preferably made on the global level. Regional level decisions are determined by regional laws and regulations, manpower availability, etc. The local level is the plant level wherein decisions at that level are specific to the needs of that plant.

Within the context of the present application, maintenance services refers to and includes all those services described herein and disclosed or listed in the attached documents.

The present invention is disclosed in greater detail in the following claims as well as in the attached documents comprising 12 brochures, an overview of the brochures, and a print out of slides of a PowerPoint presentation.

We claim:

1. A method for providing technical services, comprising the steps of:
providing a first level of a technical services plan;
providing a second level of a technical services plan; and
providing a third level of a technical services plan.
2. A method as claimed in claim 1, wherein said first level is a worldwide level, said second level is a country or region-base level, and said third level is a local level.
3. A method as claimed in claim 1, wherein said first level includes deciding how the overall business is to be run and what software components are to be used.
4. A method as claimed in claim 1, wherein said second level includes deciding how manpower is to be used.
5. A method as claimed in claim 1, wherein said third level is a plant-based or factory-based level.
6. A method of providing maintenance service, comprising the step of:
providing a menu of technical services from which to select technical services.

7. A method for providing maintenance services, comprising the steps of:
providing a menu of maintenance services from which selections of maintenance services may be made;
providing multi-level maintenance service modules; and
providing modular maintenance services.

8. A method as claimed in claim 1, further comprising the step of:
providing key performance indicators as an indicator of success of the maintenance service.

9. A method as claimed in claim 8, wherein said key performance indicators are used by both vendor and customer.

10. A method for providing maintenance, comprising the steps of:
aligning maintenance to business objectives;
establishing rules for carrying out maintenance;
determining strategies for improving performance and reducing costs; and
establishing optimization while reducing overhead;

11. A method of providing services to industry, comprising the step of:
providing a menu of available services, said menu including at least one of:
technical services,
general contracting,

on-call and logistic services,
integral plant maintenance and auxiliary process management,
information technology solutions,
electronic design and manufacturing services, and
knowledge management.

12. A method of providing maintenance services, comprising the steps of:
providing a pool of maintenance resources;
offering customers services from said maintenance resources by a menu of services; and
provide standardized procedures and reference processes;

13. A method of providing a maintenance management system, comprising the steps of:
considering in combination:
a business plan,
an operational analysis,
a criticality analysis,
a component identification, and
a failure analysis; and
generating a maintenance plan from the combination.

14. A method for providing integral plant maintenance, comprising the steps of:
providing a plurality of services including:

providing plant maintenance services,
providing specialist services, and
providing support packages.

15. A method as claimed in claim 15, wherein said plant maintenance services includes
at least one of:

predictive and preventive services,
corrective services, and
shutdown services.

16. A method as claimed in claim 15, wherein said specialist services includes at least
one of:

condition monitoring,
on-call services,
reconditioning,
diagnostics and testing,
logistics and spares,
decontamination, and
motor fleet management.

17. A method as claimed in claim 15, wherein said support packages includes at least one
of:

know-how services,
maintenance business review services,
maintenance management services,
human resources,
training,
financial control and reporting services, and
maintenance technology.

18. A method of providing maintenance services, comprising the steps of:
providing a broad range of integrated services to a customer;
providing said services as modular units which are individually selectable to meet a customers
needs, said modular units including:
general contracting,
on-call and logistic services,
plant maintenance and process management,
information technology service,
electronic design and manufacturing services, and
knowledge management.

19. A method of providing maintenance services, comprising the steps of:
providing standard software modules corresponding to offered maintenance services,
installing selected ones of said standard software modules at a customer location, said standard

software modules being selected depending upon need of the customer at said customer location.

20. A method as claimed in claim 19, further comprising the step of:
installing other selected ones of said standard software modules at another customer location,
said other selected ones being potentially different than said selected ones depending on
differences in need of said customer at said another customer location.

21. A method as claimed in claim 19, further comprising the step of:
providing a menu of available standard software modules to the customer.

22. A method of providing maintenance services, comprising the steps of:
providing maintenance services at a plurality of local maintenance service locations;
providing regional maintenance services supervisory locations; and
providing Internet connections between said local maintenance service locations and said
regional maintenance services supervisory locations.

23. A method as claimed in claim 22, further comprising the steps of:
providing a single headquarters location; and
providing Internet connections between said single headquarters location and said regional
maintenance services supervisory locations.

24. A method as claimed in claim 22, wherein said regional maintenance services supervisory locations are provided for at least three regions, said three regions being: the Far East and the European Union and a NAFTA country.

25. A method as claimed in claim 22, wherein said regional maintenance services supervisory locations supervise manpower requirements for said local maintenance service locations.

26. A method as claimed in claim 22, further comprising the step of: transferring program modules from said maintenance services supervisory locations to said local maintenance service locations through said Internet connections.

27. A method as claimed in claim 22, further comprising the step of: providing control of maintenance services at said local maintenance service locations from said maintenance services supervisory locations through said Internet connections.

28. A method as claimed in claim 22, wherein said regional maintenance services supervisory locations are provided locations around to globe so as to provide 24 hour support to said local maintenance service locations, said regional maintenance services supervisory locations each providing support during business hours for a respective location of each of said regional maintenance services supervisory locations.

29. A method for providing maintenance services, comprising the steps of:
providing maintenance services tailored to an industry; and
offering service modules to customers in said industry for outsourced maintenance.

30. A method as claimed in claim 29, wherein said industry is the airport industry.

31. A method as claimed in claim 29, wherein said industry is the power plant industry.

32. A method as claimed in claim 31, wherein said power plant industry is one of: fossil fuel power plants, atomic energy power plants, and hydroelectric power plants.

33. A method as claimed in claim 7, wherein ones of said modules are basic services modules and others of said modules are premium service modules.

34. A method of offering maintenance outsourcing, comprising the steps of:
providing an assortment of available maintenance services for customer locations;
selecting ones of said available maintenance service for a given customer location;
installing said selected ones of said services at said given customer location; and
controlling said installed services remotely.

35. A method for providing maintenance services, comprising the steps of:
aligning maintenance policies to business objectives to develop a business plan;
establishing rules for carrying out maintenance policies;
jointly determining strategies to improve performance and reduce costs;
establishing organization to meet said business plan;
measuring key performance indicators; and
benchmarking performance.

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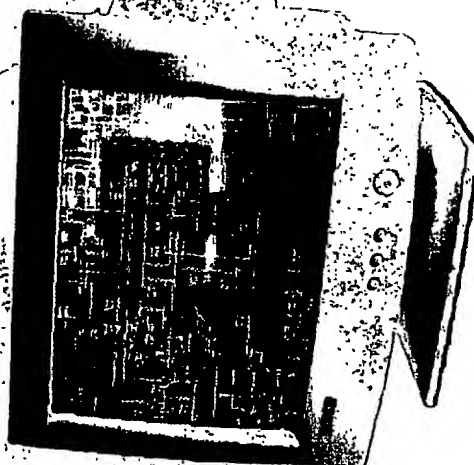
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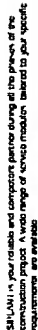
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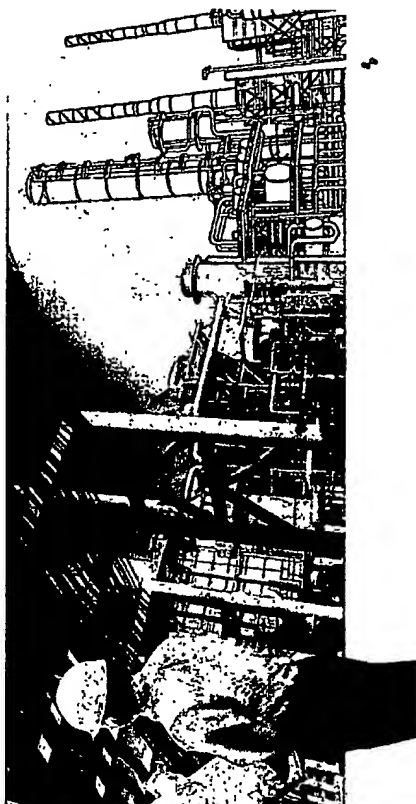
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Hardware and software testing, hardware and software commissioning, startup optimization, simulation/plant testing, project management/co-ordination with other works, documentation.

- Customer services management
- Coordination of third-party works with our technical customer services, e.g. contract for electrical equipment, mechanical equipment, pneumatic equipment, hydraulic equipment, etc., project management

► **Plant solutions**
turnkey production and supply of plant sections or of complete plants, branch-specific solution packages with integrated software modules extending from automation through production control to the ERP/SP level (vertical integration), plant relocation and covering all areas from raw material acceptance to the finished product (horizontal integration).

Solutions from a single source.

- **Planning, design, engineering** Planning of plant, sections or of complete plants, feasibility studies, production of software, hardware design/configuration, production of requirement specifications, production of product specifications, plant optimization, documentation, analysis of economic efficiency and process

County
Erection
 Installation of pipework and components, special erection work including mechanical equipment, erection engineering, site management, erection supervision, project management, documentation, disassembly and disposal services, modernization, and structural steelwork. **Industrial**

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Plant availability is of decisive importance in view of the large capital investment in production facilities. There is much to be said in favour of integral plant maintenance. SIMAIN is a practice-oriented concept for plant maintenance and operational control. This concept, however, also includes the economic aspects of maintenance and thus contributes to achievement of your business goals (BBM - Business Based Maintenance).

Integration of maintenance planning and service results in a systematic increase in plant availability as well as in production quality. The optimum mix is found by resolving the conflict between maintenance costs and failure costs on the one hand and the optimum frequency of defective prevention and corrective maintenance on the other hand.



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 - Infrastructural installations
 - Power plants
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 - Auxiliary process management

Your benefit from SIMAIN

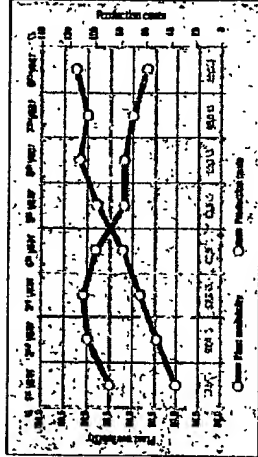
- Performance based contracts with the customer's business needs. To reinforce the alignment between the parties and ensure the win-win outcome is achieved, a performance based contract usually forms an integral part of the relationship. In this way, the interests of both parties to the contract are measured by key performance indicators and reflect the success of the relationship. The nature of the these indicators will depend on the type of the contract and the objectives of the business to be achieved in consultation with the client.

These can include

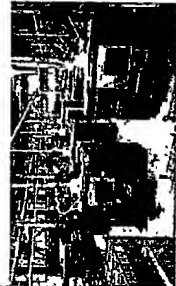
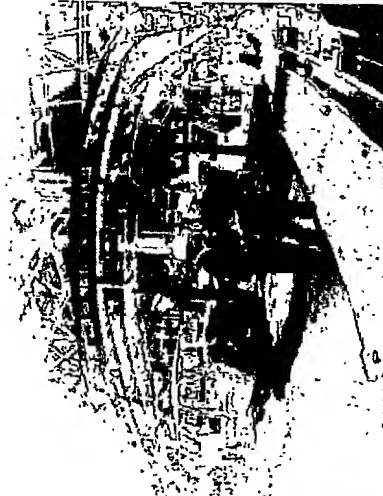
- Plant availability
- Product quality
- Reduced operating costs
- Safety

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As a result of our compact maintenance concept we reduce plant operating and operating maintenance costs.



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PMTA Overview

Plant

Maintenance

Technology

Architecture

Siemens AG - ATD TD4 PMTA

Siemens Industrial Services

ATD TD4 00/03/02 - Folien-Nr.: 1
Ord.-Nr.: SLPMTA-0101-EX-0004-MCS
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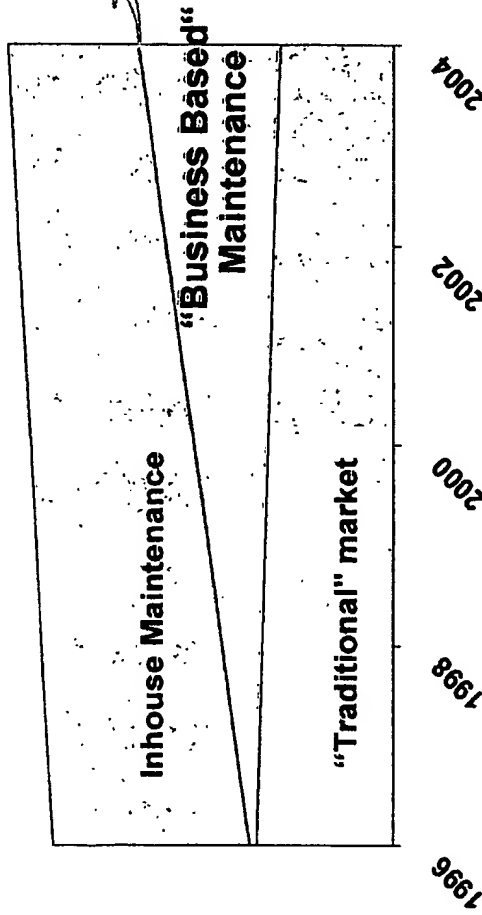
Mr. E. M. B. B. B.
1st Vice

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PMTA - Formulated to meet new market demands

Global Maintenance Market
in DM billion

80



Trend setting Factors :

- Shareholder value increases cost awareness
- Increase in consequential shut-down costs
- Increase in the volume of safety, environmental & certification instructions
- Customers expect global & standardized services

Factors critical for success:

- Process analysis & plant know-how
- Network of maintenance competence
- Pooling of resources
- Standardized maintenance methodology
- Cross-sector best practices

➔ increased customer benefit



Anlagenbau und
Technische Dienstleistungen

Mr. E. H. Z. B. 1st unit

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Ord.-Nr.: SI-PMTA-0101-EX-0004-MCS
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Yesterday

Today

Tomorrow

Management level

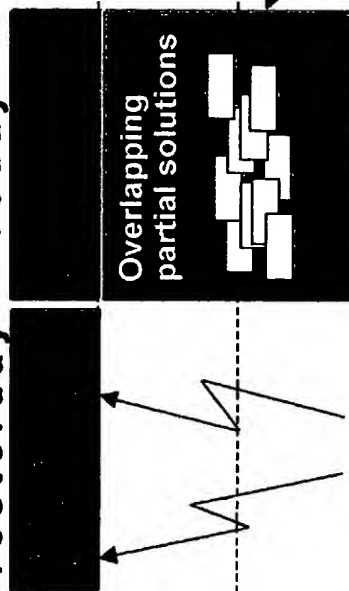
Planning level

Command level

Automation level

Field level

Sensors / actuators



Techn. influence

**Systems/solutions
Communication
Operation**

**Proprietary island
Alphanumeric**

**Part standards
Open
Graphic**

**Consistent
standards
Ease of use**



Siemens Industrial Services

ATD TD4 00/03/02 - Folien-Nr.: 3
Ord.-Nr.: SI-PMTA-0101-EX-0004-MCS
PMTA S-H 000302

Anlagenbau und
Technische Dienstleistungen

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Plant Maintenance Technology Architecture Objectives

PMITA

- ✓ create standardized procedures and reference processes
- ✓ develop assessment models to as a decision basis for business-based maintenance
- ✓ define, structure and implement the framework for methodological knowledge acquisition
- ✓ provide an integration concept for universal and global IT support

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ATD TD4 00/03/02 - Folien-Nr.: 4
Ord.-Nr.: SI-PMITA-0101-EX-0004-MCS
PMITA S-H 000302



Anlagenbau und
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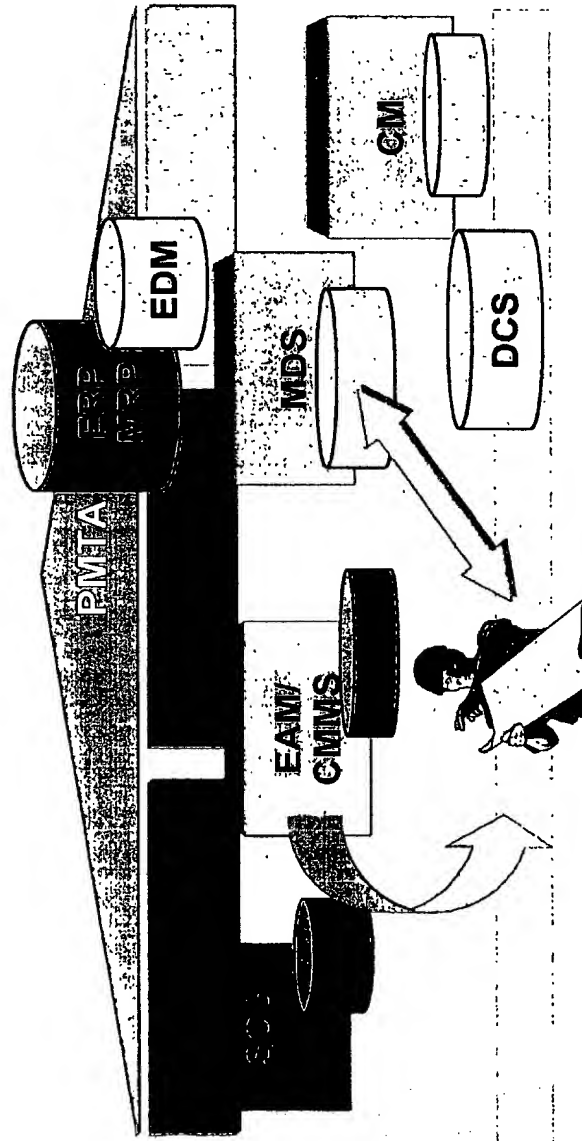
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SIEMENS

PMTA - An an integrated system environment that enables the maintenance knowledge network

PMTA Components and Terms	
CMMS...	Computerized Maintenance Management System
MDS...	Maintenance Decision Support
CM ...	Condition Monitoring System
DCS	Digital Control System (Leitsystem)
SOS ...	Scorecard Optimization System
MIMOSA	Machinery Information Mgmt.
	Open Systems Alliance

ERP ...	Enterprise Resource Planning
MRP ...	Manufacturing Resource Planning
EDM...	Engineering Data Management
EAM...	Enterprise Asset Management



Anlagenbau und
Technische Dienstleistungen

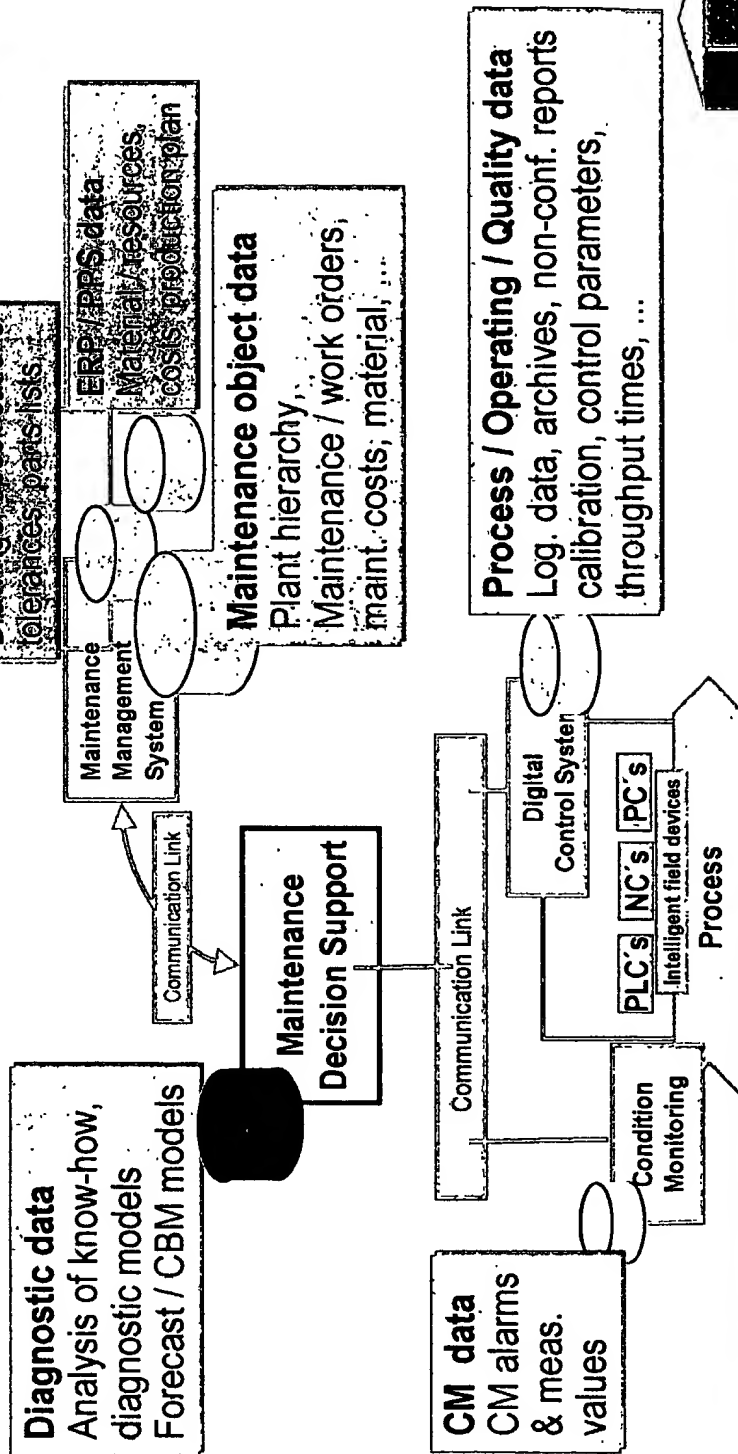
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Ord.-Nr.: SI-PMTA-0101-EX-0004-MCS
PMTA S-H 000302

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Overview of data and archives



SIEMENS

PMTA : Overall concept for know-how based world class maintenance for the development of new markets

PMTA

Plant Maintenance Technology Architecture

Processes and Processes

- Design uniform maintenance processes
- Establish standards for globally applicable methods and reference processes
- Develop assessment models, technical, commercial (Life Cycle Costs, LCC)

Knowledge-Base Business Processes

- Implement asset management concepts
- Targeted maintenance strategy definition and implementation
- Collect and consolidate existing know-how
- Derive best practices from business and maint. processes

Knowledge-Base Technical Processes

- Productivity increase of plants
- Systematic utilization of plant know-how
- Modules for decision support
- Performance monitoring

Integration

- Use of standards and innovative IT solutions
- Global, consistent and uniform provision of information

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PMTA S-H 000302

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PMTA - Methods and Processes

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Knowledge-Based Business Processes

Knowledge-Base Technical Processes

Integration

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Ord.-Nr.: SI-PMTA-0101-EX-0004-MCS
PMTA S-H 000302

Anlagenbau und Technische Dienstleistungen

Das Ergebnis Ziel ist unter Ziel

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Methods and Processes

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Knowledge-Based Technical Processes

Integration

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ATD TD4 00/03/02 - Follen-Nr.: 9
Ord.-Nr.: SJ-PMTA-0101-EX-0004-MCS
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Anlagenbau und Technische Dienstleistungen

Das Erbgut
ist unser Ziel

SIEMENS

PMTA - Knowledge-base Technical Processes

PMTA

Methods and Processes

Knowledge-Base Business Processes

Knowledge-Base Technical Processes

- Total Productive Maintenance (TPM) and optimization of the plants based on continuous improvement processes
- On-line performance monitoring of the plants
- Development of Maintenance Decision Support (MDS) methods and modules for diagnosis, optimization and residual life estimation
- Integration of existing databases containing descriptions of product, system or plant behavior for technical modeling, e.g. wear models
- Preparation of an evaluation model and competence structure for commercial Condition Monitoring (CM)

Integration

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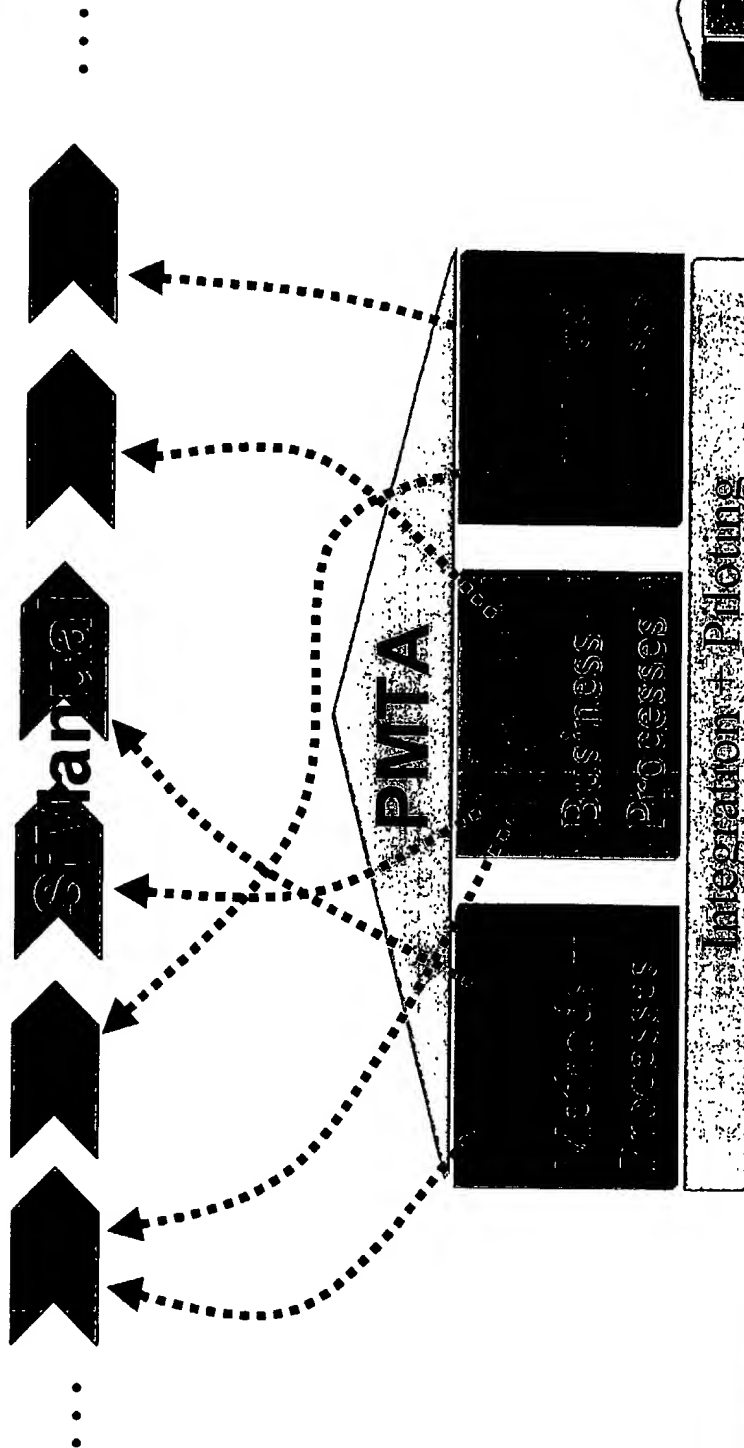
PMTA - Integration

PMTA

Methods and Processes	Knowledge-Base Business Processes	Knowledge-Base Technical Processes
<ul style="list-style-type: none"> • Development of a PMTA information model, taking standards and strategic system platforms into account • Evaluation and active support of important standardization activities in maintenance (MIMOSA, ISO, STEP) • Provision of innovative technologies for Teleservice and "Virtual Team Support" • Installation of effective mechanisms for experience exchange and knowledge management • Piloting of methods and solution modules with selected customers 		
Integration		

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PMTA and SiManual



Siemens Industrial Services

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Ord.-Nr.: SI-PMTA-0101-EX-0004-MCS
PMTA S-H 000302



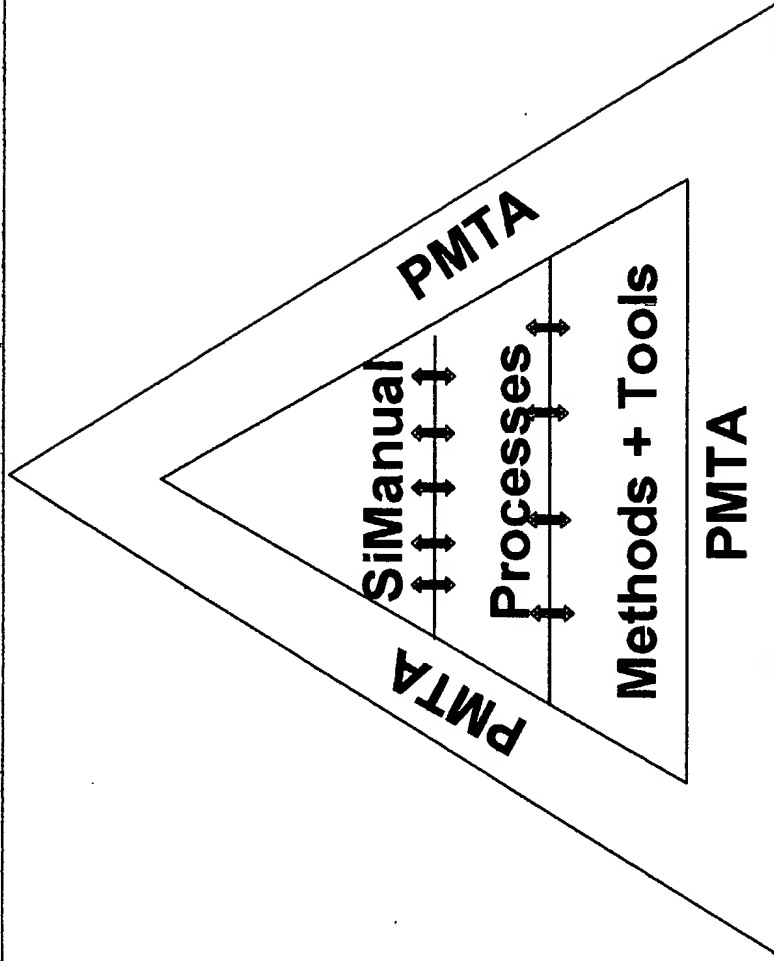
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PMTA and SiManual



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Ord.-Nr.: SI-PMTA-0101-EX-0004-MCS
PMTA S-H 000302



Anlagebau und
technische Dienstleistungen

*Wir Erhöhen
Ihre Produktivität*

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SIEMENS

SIMAIN – run faster,
longer, better

fitness
for
plants



SIPLANT General Contracting
S-737373 – OnCall and Logistics Service
SIMAIN
SIT Industry IT Industry Solutions
SERVTRONIC – Electronic Manufacturing Service
SIBRAIN – Knowledge Management

Siemens Industrial Services

Industrial Property
Management Services

*Your success
is our goal*

Beating the competition by maintenance outsourcing

Is maintenance part of your core business?

As global competition increases and supply chains become shorter, businesses are being forced to find new ways to increase plant performance whilst simultaneously reducing costs. One way in which business is addressing this is by

- ▷ reducing complexity, thus enabling greater focus on the core business

One area of significant complexity for manufacturing businesses is plant maintenance. And as well as adding complexity, maintenance can make up anywhere from 5-40% of the total costs of production. Whilst maintenance is critical to business outcomes it is often regarded as a necessary evil, and as a result it has been difficult to achieve sustained improvement in performance from an in-house maintenance group without intense management effort that distracts from the core business process.

SIMAIN Business Based Maintenance - our systematic solution

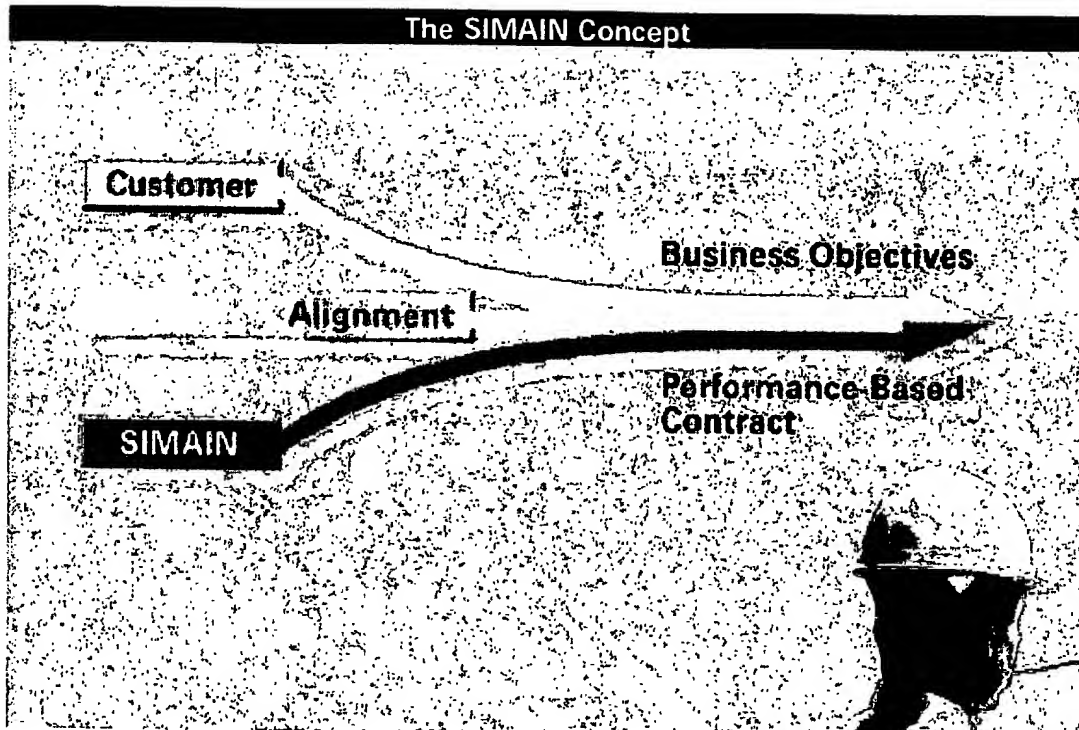
Siemens delivers professional maintenance services throughout the world, not just for Siemens systems and installations but for all machinery and equipment in your plant. Siemens ranks among the very few maintenance providers who have the advantage of vast worldwide technical expertise and presence. We deliver a

- ▷ structured approach,
- ▷ unique processes and procedures,
- ▷ individually customized solutions,
- ▷ defined, agreed maintenance strategies

**Reduced complexity,
greater focus,
improved performance
and reduced cost -
all at the same time!**



What is SIMAIN Business Based Maintenance?



SIMAIN Business Based Maintenance is a concept which considers the business objectives of the customer and then develops a unique package to meet those objectives. This strategy development creates a partnership focussed on a win/win outcome for both parties.

Performance-based contracts.

To reinforce the alignment between the parties and ensure the win/win outcome is achieved, a performance-based contract usually forms an integral part of the partnership. In this arrangement, the rewards to the contractor are measured by Key Performance Indicators and reflect the success of the relationship.

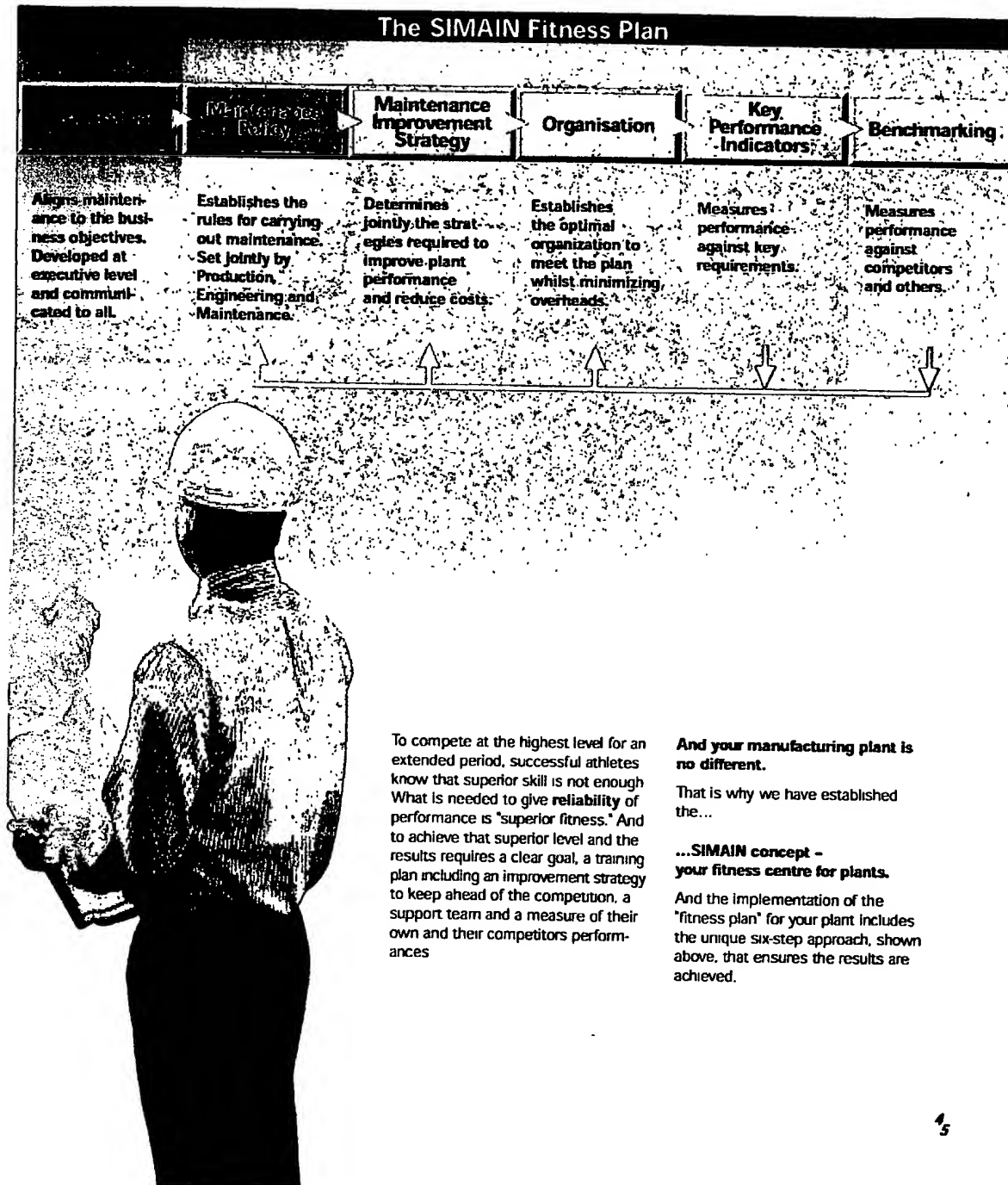
The nature of the Key Performance Indicators will depend on the type of the contract and the objectives of the business and are agreed in consultation with the client. On a total outsourced contract for Integral Plant Maintenance these can include

- ▷ safety
- ▷ plant availability
- ▷ reduced operating costs
- ▷

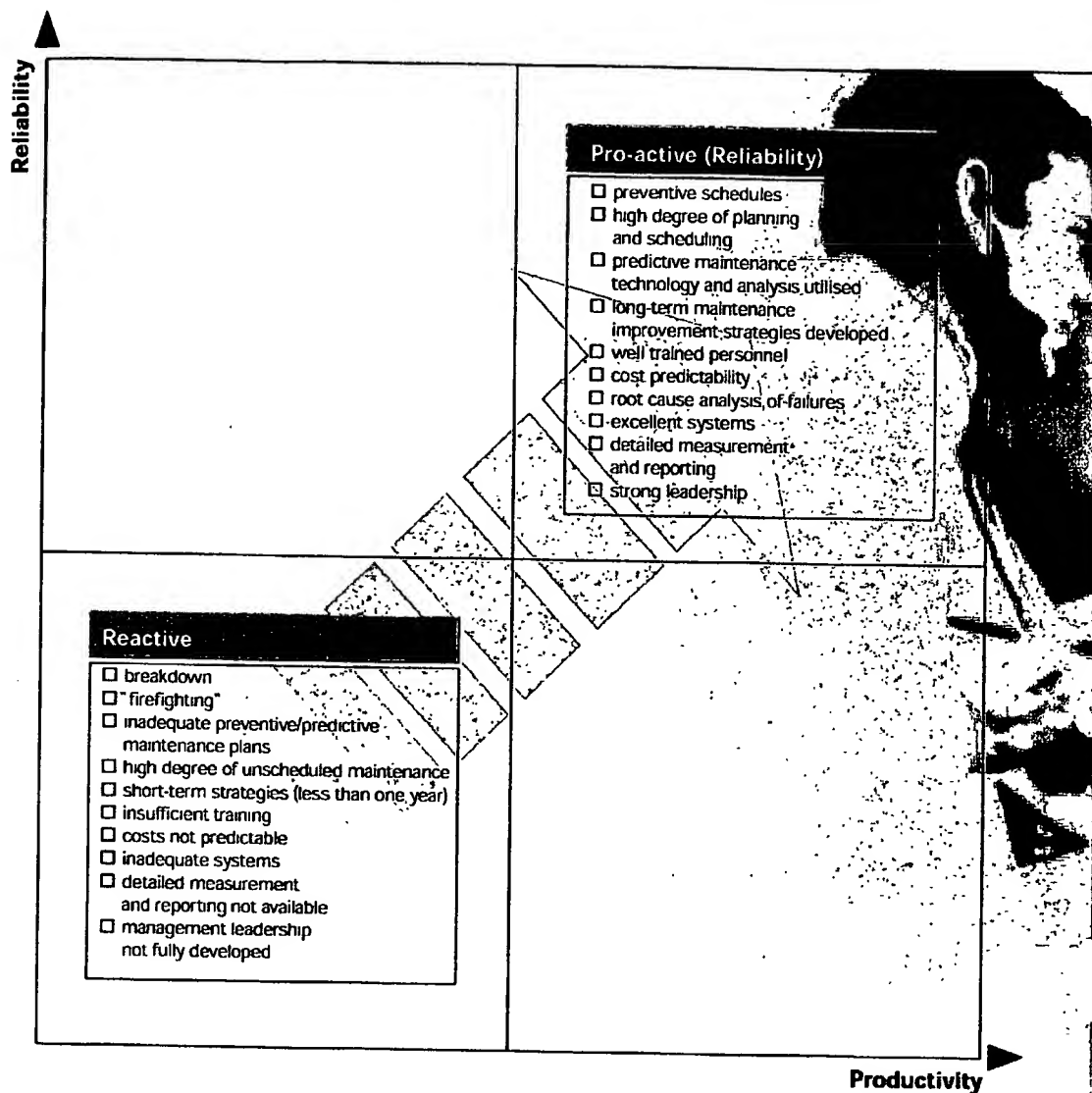
The weighting of the individual components depends on their importance to your business.



SIMAIN – Fitness for your plant



The shift to reliability



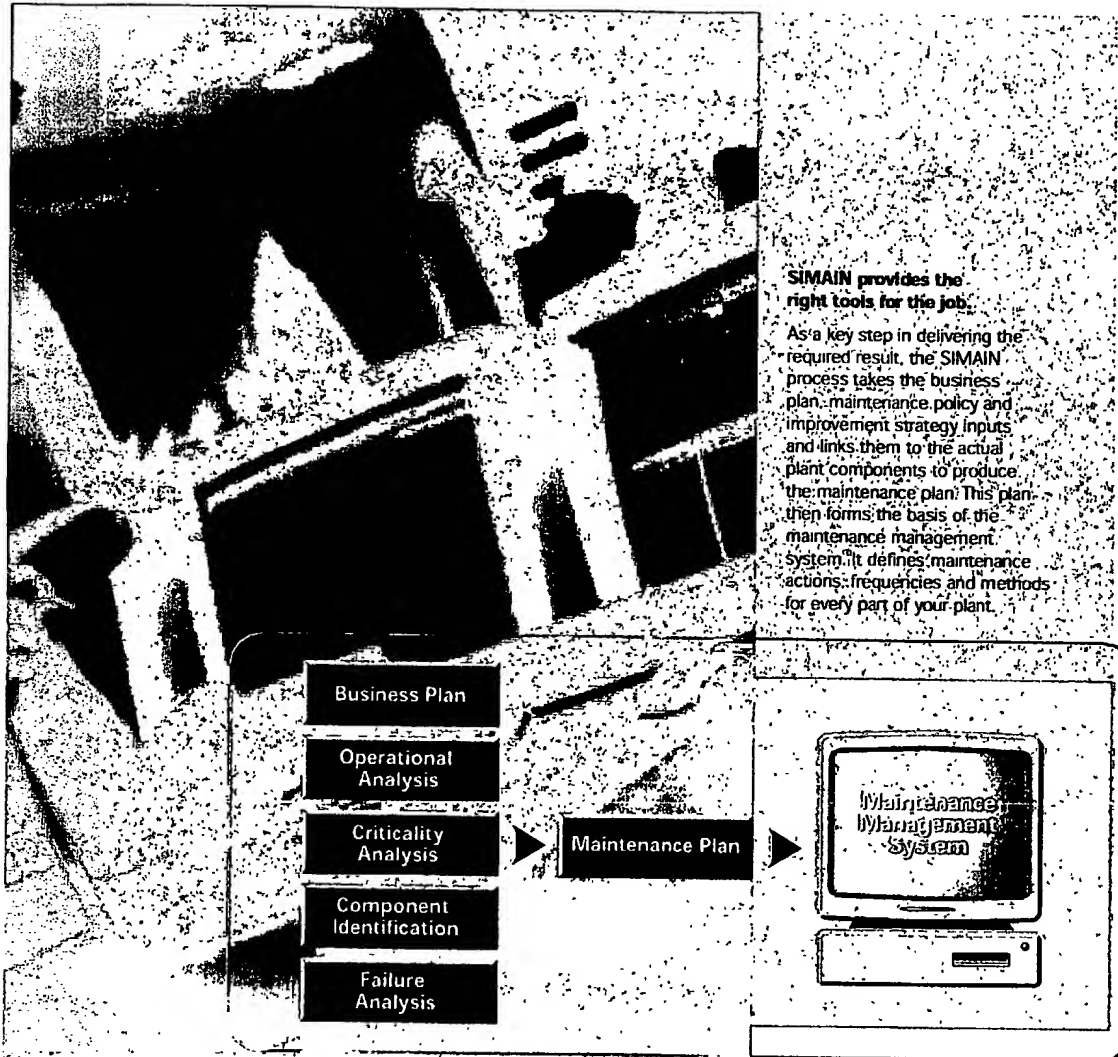
A pro-active strategy: The key to reliability.

Reliable plant performance means more than just a good set of maintenance indicators, it delivers real bottom-line results including:

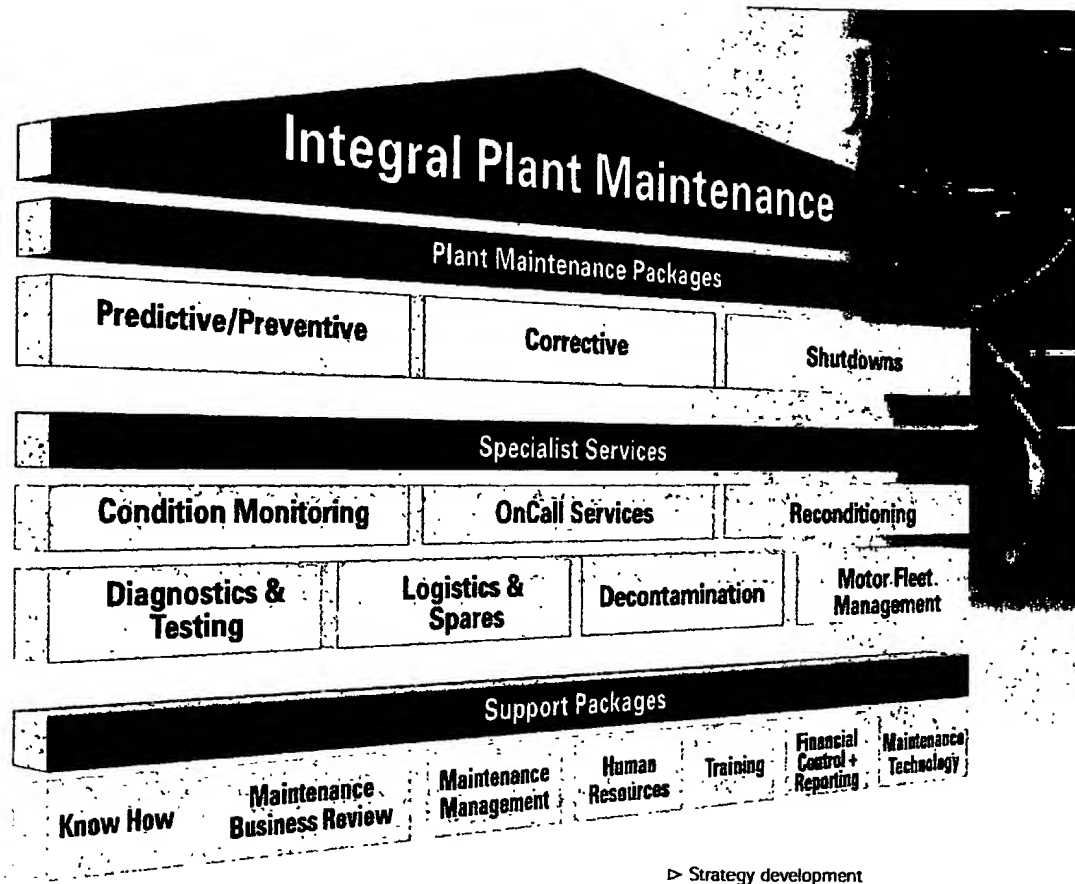
- ▷ increased capacity from existing fixed assets
- ▷ reduced costs, both production and maintenance
- ▷ improved on-time delivery of products
- ▷ reduced inventories

Siemens can help you understand where you are in terms of Reactive/Pro-active maintenance by carrying out a Maintenance Business Review. The review can be either a strategic overview or an in-depth analysis. As an outcome of this review, you can determine how you wish to proceed.

A systematic approach



The SIMAIN packages



The SIMAIN concept offers you the opportunity to choose the package that best suits your needs, from total outsourcing through to individual specialist services.

Integral Plant Maintenance

Total outsourcing of plant maintenance for electrical equipment, mechanical equipment and plant buildings, including.

- ▷ Strategy development and optimization
 - ▷ Predictive condition-based maintenance
 - ▷ Preventive maintenance
 - ▷ Corrective maintenance
 - ▷ Planned shutdowns
 - ▷ Spare parts management
 - ▷ Labour management
 - ▷ Maintenance management systems implementation and optimization
- Aligned to customer needs through performance-based contracts.

Tailored to your needs



Plant Maintenance Packages

Tailored to meet the customer's needs from any combination of

- ▷ Predictive/Preventive maintenance
- ▷ Corrective maintenance
- ▷ Planned shutdowns
- ▷ Specialist services

To understand more about what some of these packages offer, ask for our brochures that explain the.

- ▷ Technical Support Program (TSP)
- ▷ Motor Management Program (MMP)

Specialist Services

Take advantage of the expertise provided by our partners in the Siemens group of companies, including

- ▷ Condition monitoring – vibration, thermography, ultrasonics, oil analysis, motor current, alignment
- ▷ On-call services for equipment malfunction
- ▷ Reconditioning services for motors, switchgear, transformers, compressors and other equipment
- ▷ Diagnostics and testing from high voltage to electronic circuitry
- ▷ Logistics and spares management – minimize your working capital
- ▷ Decontamination services for electronic PCBs and electrical equipment
- ▷ Motor Management
 - logistics and spares management
 - maintenance
 - energy reduction
 - financing package

Support Packages

Every structure needs a strong foundation. Maintenance is no exception. For SIMAIN this is provided through our Support Packages. You have the benefit of all of these building blocks working for you, including:

Maintenance Management

- ▷ Strategy development and optimization
- ▷ Policy development
- ▷ Systems

Maintenance Business Review

- ▷ Through our unique process we can help you benchmark your current organization and build an improvement plan

Know-How

- ▷ To ensure Best Practice and experience is shared we have established our intranet-based information network

Maintenance Technology – to bring you the latest in:

- ▷ Condition Monitoring
- ▷ On-Line Sensors
- ▷ Decision Analysis Tools

Training

- ▷ All aspects of maintenance

Financial Control and Reporting

- ▷ Prompt, comprehensive analysis of past performance and future projections.

Human Resources

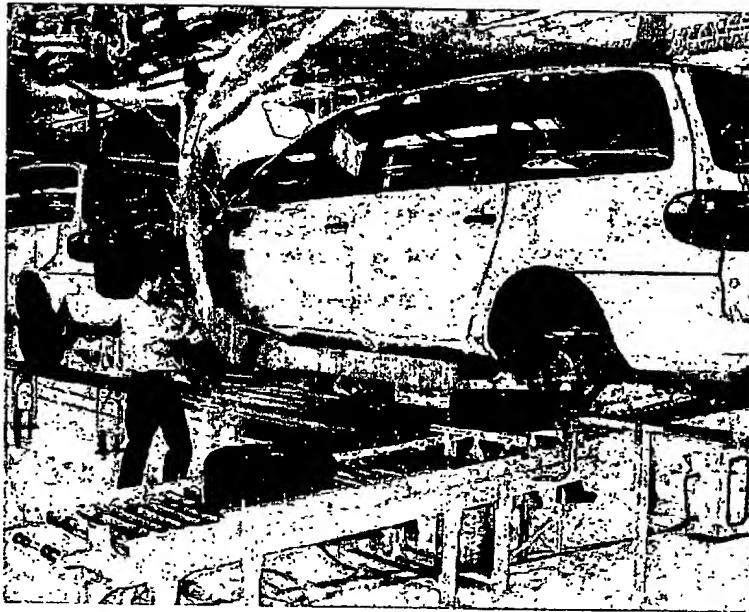
- ▷ The employment and management of the people performing the maintenance

Access to these support packages enables you to benefit from the worldwide experience with SIMAIN in a wide range of industries

We can support you in all aspects of your maintenance work

Maintaining an industrial plant requires a combination of skills and resources to meet the varying needs of.

- ▷ Day-to-day first-line maintenance including emergency corrective work, cleaning, adjusting and monitoring plant health
- ▷ Routine planned maintenance on a corrective, preventive, predictive and reliability basis and
- ▷ Major outages for plant overhauls or modifications



SIMAIN offers a customized solution to meet your needs. And most importantly this can include the use of your own operating personnel to carry out all or part of the 'first line' including inspections, lubrication and other activities as part of a TPM-based philosophy.

SIMAIN can keep your plant in top condition, too!

Pick out a comparable case:

- ▷ Car manufacture, China and Portugal
- ▷ Chemical production, Brazil
- ▷ Gas processing and collection, Germany
- ▷ Mining, Australia and Chile
- ▷ Nuclear research, Germany
- ▷ Oil and gas, Norway
- ▷ Open cut coal mining, Germany
- ▷ Open cut coal mining, Australia
- ▷ Paper manufacture, Australia
- ▷ Parcel handling centres, Germany
- ▷ Steel, cold-rolling mill with processing lines, USA
- ▷ Telecommunications, Denmark
- ▷ Thermal power station, Australia
- ▷ Water and sewage treatment, Australia
- ▷ Water treatment, Switzerland

Let's discuss your requirements.

Together with our partners we can provide custom-designed integrated maintenance services for your plants too. Covering every type of plant and equipment you wish to use, irrespective of the manufacturer and technology involved, we can

- ▷ Take full responsibility for maintenance of the whole or just part of your plant.
- ▷ Provide emergency service to compensate for workforce shortages and breakdowns.
- ▷ Operate and maintain specific plant and machines
- ▷ Provide maintenance consultancy and optimization.
- ▷

Call us, we look forward to putting you in the picture about the scope of SIMAIN Business Based Maintenance.

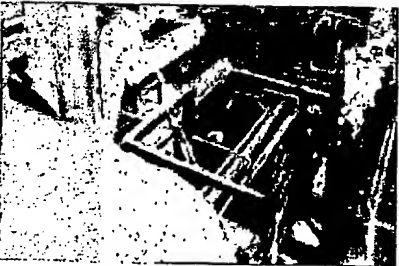
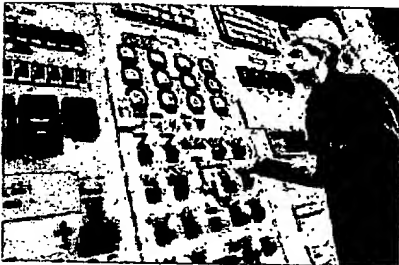


The people factor for your success

The SIMAIN Maintenance Organization

Based upon the solution chosen, we can tailor an organization to suit your needs.

We can provide our own resources or integrate your existing workforce into a new structure.



We have an unrivalled track-record worldwide in this integration approach, enabling us to utilize the skills and talents of existing personnel and ensuring those many years of experience and training of your staff are not lost.

The SIMAIN organizational structure is team-based to ensure the full involvement of all personnel

Wherever possible, the reward schemes for our employees are aligned to the performance-based structure for the business as a whole, thus ensuring a common focus throughout our whole team.

Competence you can rely on: Working with Siemens pays off many times over

1. A pool of experts

Our staff provides you with the best-practice know-how derived from hundreds of projects within the company. Working to your advantage, high-performance communications systems mobilize the expert knowledge of the many skill centres we operate throughout the world.

2. Motivated teams

Extensive autonomy through flat organizational structures, a high degree of customer focus including the benchmarks set by Key Performance Indicators, characterizes the way our maintenance personnel approach their work.

3. Proven maintenance strategies

We have the strategies to move from a reactive to a pro-active maintenance approach.

4. Information -

The "Performance Plus" Factor

No matter what your current or proposed system is, our staff have the expertise to set up a maintenance management system that will improve analysis and reporting.

5. Innovative diagnostic tools

The employment of state-of-the-art measurement and diagnostic systems enables us to accurately identify the condition of plant and machinery.

6. Core competence saves learning costs

Maintenance is our core business. Our competency in this field means a quicker implementation for you.

7. Individually customized contracts

The extent of services, the transfer of staff, performance-related bonuses, responsibility for plant operation, sale and lease-back schemes including the transfer of sub-plant and warehouse stocks... with us, you can discuss any arrangement.

8. Spare parts distribution and after sales service available worldwide


You can also benefit from our highly efficient international distribution network for replacement parts which are needed urgently in the event of breakdown. You can call our service centre 24 hours a day, 365 days a year for help - in any of 190 countries.

9. Flexible organizational structures

As a world market leader in plant automation, Siemens has thorough knowledge of the typical technologies in use - irrespective of the manufacturer. Where work outside our own specialization is required, we will procure this from other specialists, preferably local ones.



Worldwide support



Our maintenance services are just a phone call away

- ☐ 296 locations in
- ☐ 69 countries

This was our integral plant maintenance brochure.

Please ask for the other SIMAIN service profiles on the following topics:

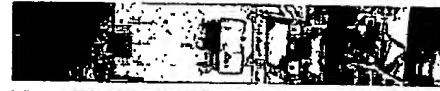
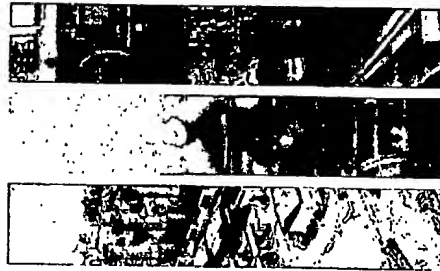
- ☐ Auxiliary process management
- ☐ Electromechanical components and switchgear maintenance
- ☐ Infrastructure installation maintenance
- ☐ Power plant maintenance

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 Technical Services, ATD TD 4
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<http://www.atd.siemens.de/simain>

Siemens Aktiengesellschaft

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 TD 4 020/99 PS

Introduction



Integration sets in where there's no room for ongoing improvement. To help you remain competitive in a global marketplace our contribution is on-line support of the productivity and economic efficiency of your entire plant - throughout the entire life-cycle of the plant.

SiemensIndustrialServices offer best-practice support for successful planning and execution of all work associated with your plants - irrespective of the size of the plant and the number of users involved. As a result we are the largest technical service providers for

industry energy and infrastructure, we can make a significant contribution to making you increasingly fit for international competition.

With the aid of our services, you can significantly reduce your operating costs. We make use of know-how and experience gained in numerous diverse projects internationally in solving your specific applications. You can also make use of our extensive knowledge in application of automation, information power, instrumentation and drive technology. An overview of the extensive

customized services offered locally by SiemensIndustrialServices for their partners is given below. In line with our motto "Your Success is Our Goal", we are on-call at your service 24 hours a day, 365 days a year.

Dr. Albert Manger
Dr. Albert Manger
Manager
Technical Services

Dr. Christian Sommer
Dr. Christian Sommer
Manager
Technical Services



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SiemensIndustrialServices

Technical Services provided by Siemens keep your plants up to the mark throughout their lifecycle

SIPPLANT
General Contracting

SIBRAIN
Knowledge Management

SIBRAIN
On-Call and LogisticsService

SIBRAIN
Integral Plant Maintenance and Auxiliary Process Management

SERVTRONIC
Electronic Design & Manufacturing Services

SIT Industry
Information Technology Plant Solutions

The world has shrunk, in size and productivity has grown to an undreamed of level. To stay competitive, your plant must partner in order to successfully meet international competition and to keep up with technical developments. Outsourcing of numerous internal processes is a cost- and asset-effective strategy. Such processes can, for example, be taken over by SiemensIndustrialServices. We offer a wide range of technical services. With 1700 employees at 208 locations around the globe are available for construction and optimization of your plants.

We're your partner for industry, energy and infrastructure.

Our services cover the entire lifecycle of the plant. From planning, erection and commissioning through fault, alarm and corrective maintenance and including plant modernization and expansion. We are also experts in disposal and recycling of old plants.

SiemensIndustrialServices is a worldwide service provider offering extensive services for the construction, operation, technical customer services for a large number of facilities.

E-Mail: plant@siemens.de
www.siemens.com/industrialservices

An overview of our services:

SIPPLANT stands for customer services relating to general contracting and plant construction. We offer turnkey, firm-price manufacture and on-time delivery of plant sections and of complete plants. In addition, we offer consulting services, planning and design of the plant.

SIBRAIN - The On-Call and LogisticsService with a worldwide reputation for dependable, requirement oriented fault elimination for products, systems and plants - always with "speed on demand". Our FieldService staff is at your plant. Our RepairService comes out to your plant. Our RepairCenters and our OnSiteService are located directly with the technical plants of our customers. Our LogisticsService ensures that the correct parts are available in time at the right place on a worldwide basis. As a result of customized services, quick help for users and menu services is on call under 0180-131731 and is available 24 hours a day, 365 days a year.

SIBRAIN - Business Based Maintenance is a mutually agreed concept for maintenance and management of secondary processes based on your business. It includes the necessary power and infrastructure services not only for systems and plants of Siemens, but also for equipment and facilities of all kinds of manufacturers.

SERVTRONIC is a new knowledge based service of SiemensIndustrialServices, which helps your company to gain a competitive advantage through by developing your employees' knowledge. We individually design our technical education and training programs according to the needs of our customers by using the latest methods and learning technologies.

SIT Industry supplies manufacturer and system-independent IT solutions tailored to the needs of your company. Just intelligent software for complex systems and individual customer benefits. We customize individual components and the associated data interfaces, to provide all-encompassing solutions between the ERP and the automation level and we can also supply the necessary IT infrastructure.

SERVTRONIC - the Electronic Design and Manufacturing Service for embedded electronics is a service for customers-specific electronic solutions. We can supply more than just the electronic plug-in cards, equipment, and systems - our objective is provision of an all-encompassing solution. Thinking in terms of complete solutions guarantees you safety and reliability. We can support your electronic systems using a highly individualized approach, maximum flexibility and by tapping available synergy potentials.

SIBRAIN is a new knowledge based service of SiemensIndustrialServices, which helps your company to gain a competitive advantage through by developing your employees' knowledge. We individually design our technical education and training programs according to the needs of our customers by using the latest methods and learning technologies.



SIPLANT - General Contracting



Planning of a plant requires a lot of forethought, because considerable investments are involved. It is therefore of the utmost importance that the right partner be chosen from the very start. Construction experts are experts for new plant sections and of complete plants. Our experienced plant experts assist you by offering professional management at all stages of the project - from initial planning and design through hardware and software engineering to the start-up and commissioning of the plant.

- ▶ As a solution partner with technical project experience encompassing the entire spectrum and deep-rooted knowledge of different production methods. We can develop solutions for you, which are capable of meeting future challenges.
- ▶ Using modern, field-proven methods and technologies based on maximum economic efficiency and open to future developments.
- ▶ With local knowledge and global strength. Worldwide presence at approximately 300 national locations.
- ▶ With excellent references in nearly all branches of industry. And this with 150 years of experience in every corner of the globe.

We are your partner for plant construction! System integration/modernization
Your benefit is the yardstick against which we evaluate the suitability of our technical service and construction. You always rely, are available all over the world.

SIPLANT: Global strength - available locally.
"All business is local." We combine our global strength with local knowledge - a profitable advantage for both our German and international customers. Our specialists, who are equipped with well-grounded technical and branch-specific know-how, can develop solutions quickly tailored to your needs. We also comply with all relevant regulations in addition to the relevant national standards and quality standards.



Our experts carry out planning not only for new plants, but also for modernization and extension of existing plants.



Only some of our trademarks, under which we offer branch-specific solutions, are depicted here.



SIEMENS

Technical Support Program Tailored for improved efficiency

*fitness
for
plants*



SPLANT General Contracting
SI-737373 OnCall and Logistics Service
SIMAIN Maintenance and Repair Services
SIT Industry Information Technology Plant Solutions
SERVTRONIC Electronic Design & Manufacturing Services
SIBRAIN Knowledge Management

Siemens Industrial Services

Industrial Projects
and Technical Services

*Your success
is our goal*

Switch over to lower costs

Worldwide experience in business based maintenance.

Your business strategy should take in account the ongoing changes resulting from globalization, technical advances and increasing competition. The maintenance is an important part of this strategy.

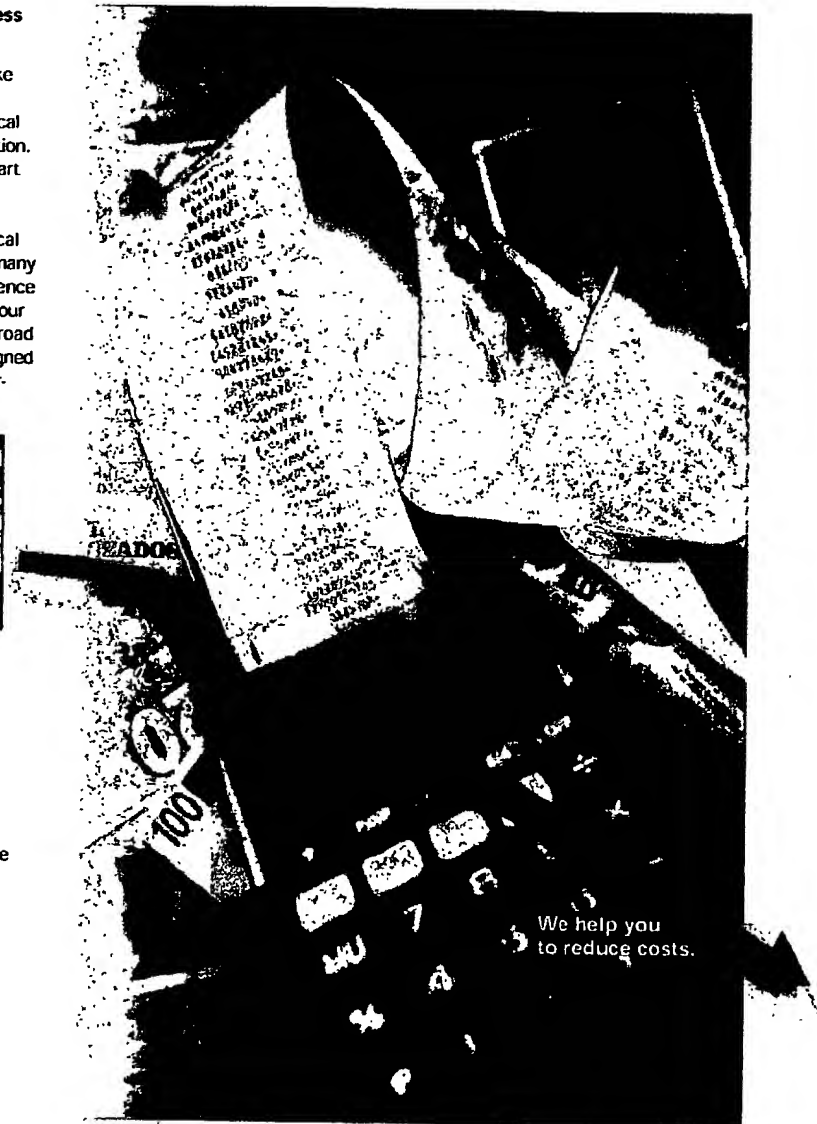
In developing the Siemens Technical Support Program (TSP), we used many years of experience and the confidence gained by excellent relations with our customers. The program offers a broad range of maintenance services designed to provide comprehensive, vendor-independent solutions



Recognizing your best choice.

The Technical Support Program provides the following benefits to your organization:

- ▷ Increased equipment reliability and availability
- ▷ Reduced costs through a proactive Business Based Maintenance approach
- ▷ Minimized downtime
- ▷ Optimized asset management
- ▷ Capital solutions
- ▷ Fast response when and where you need it



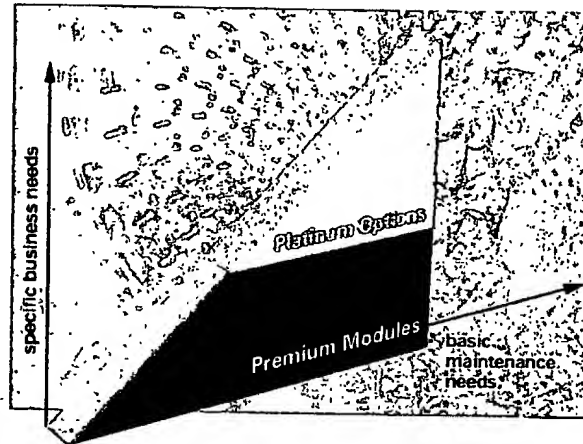
We help you
to reduce costs.

Technical Support Program Premium Modules

Your choice for maintenance excellence.

Our Technical Support Program distinguishes between:

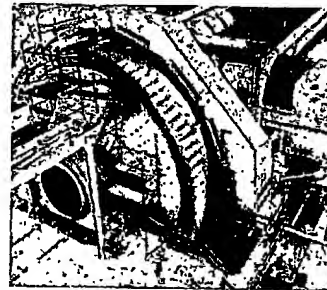
- ▷ Premium Modules which are technology-oriented and cover your basic maintenance needs
- ▷ Platinum Options that take you into Business Based Maintenance solutions, tuned to the special needs of your business



The Premium Modules focus on increased reliability and availability of

- ▷ Power generation and distribution equipment
- ▷ Automation systems
- ▷ Drive systems
- ▷ Instrumentation and control
- ▷ Information technology systems

They can add the bottom-line dollars that drive your business.



Technical Support Program – Premium Modules			
Support Services	Electrical Distribution System Services		Automation & Drive Services
Power System Studies	Switchgear & Switchboards	Emergency Systems	Control Systems
Condition Monitoring	Cable & Busway	Grounding Systems	SCADA Systems
Training	Circuit Breakers & LV, MV, HV Switches	Transformers	Drive Systems
Routine Operational Checks	Direct Current Systems	Capacitors & Reactors	Automation Systems
Emergency Response	Protective Devices	Metering & Energy Mgt.	Motor Control Systems
Program Management			

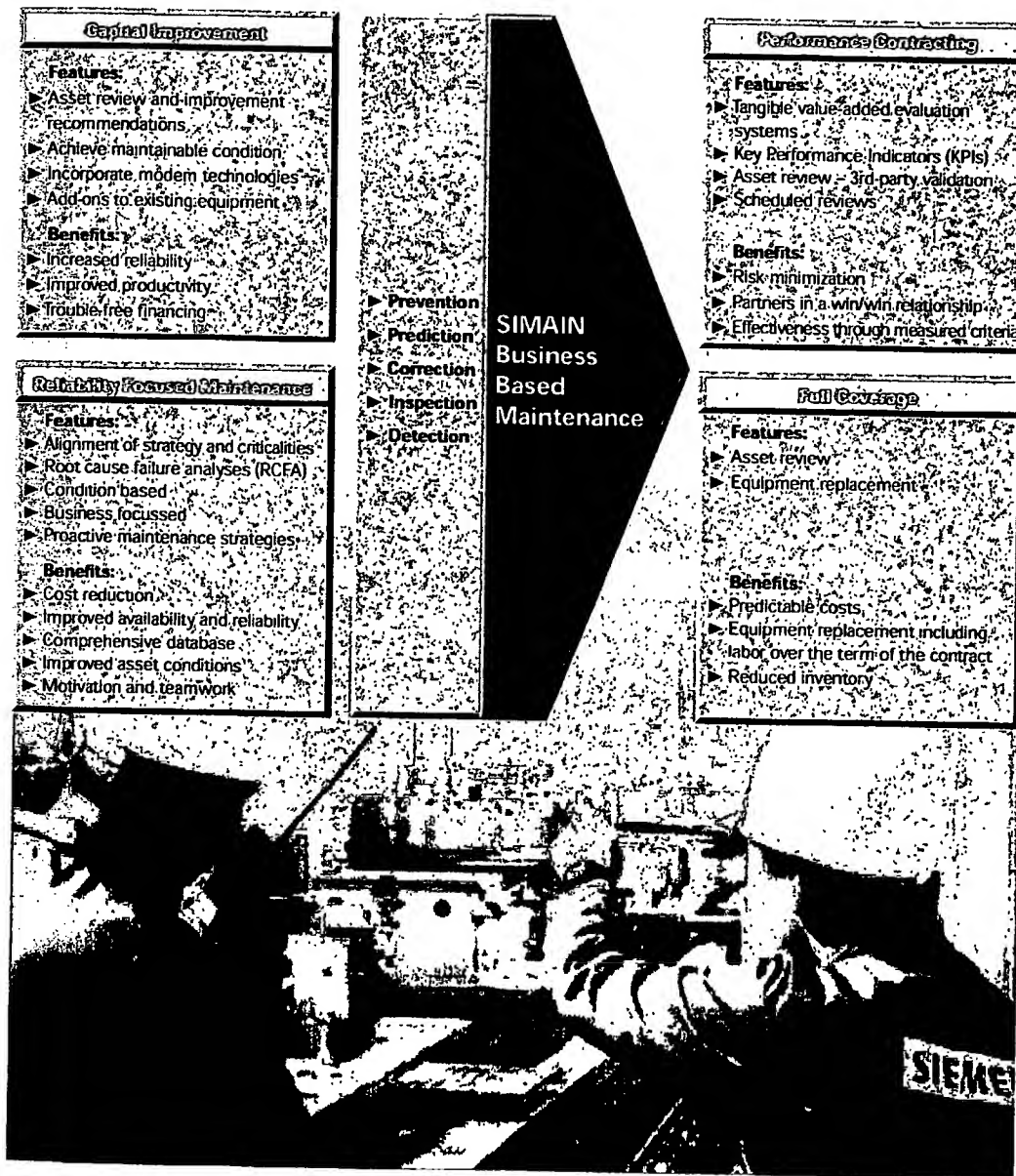
Technical Support Program Platinum Options

Maintenance alignment to your business objectives.

By selecting appropriate premium modules, enhanced by platinum options, you ensure maintenance

excellence. Any maintenance problems will be spotted and corrected early,

before they can develop into expensive breakdowns.



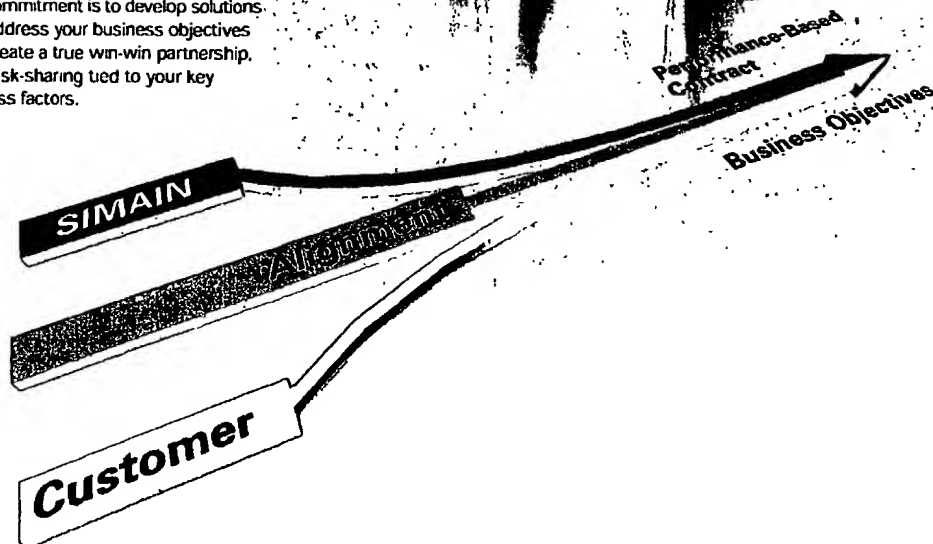
You have the choice: From service provider to business partner

It's more than just a job.

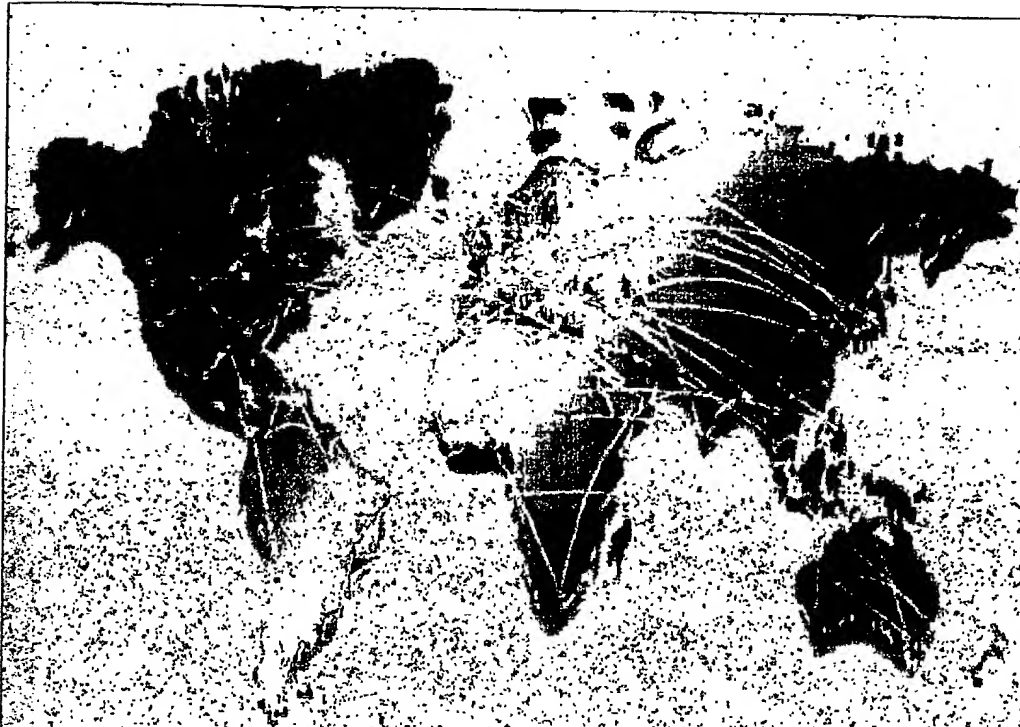
SIMAIN Business Based Maintenance is a process that first defines your equipment and maintenance needs in terms of your business goals. The next step is to develop uniquely tailored maintenance strategies that will help you to reach your objectives. These proactive strategies, complemented by modern monitoring technologies, will improve your equipment reliability and positively impact the bottom line. Most importantly, the success of these changes will be achieved by working closely together with your employees to sustain improvements.



Our commitment is to develop solutions that address your business objectives and create a true win-win partnership, with risk-sharing tied to your key success factors.



Discover the better alternative for electro-mechanical maintenance



Let's discuss your needs

We can provide customized maintenance services for your business, covering every type of plant and equipment irrespective of the manufacturer or technology.

Worldwide support next door:

- ▷ 296 locations
- ▷ 69 countries

Ask for the other SIMAIN service profiles on the following topics:

- ▷ Auxiliary process management
- ▷ Integral plant maintenance
- ▷ Maintenance for infrastructure and transportation
- ▷ Power plant maintenance

For more information contact your local Siemens office or the address below.

You can learn more about us on our web page www.siemens.com/simain

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Siemens Aktiengesellschaft

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SIEMENS

Effizienzsteigerung durch Nebenprozeß-Management



*fitness
for
plants*

SIPLANT
Anlagenwartung

SI-73 73 73 - Technische
Industrie Kundendienst

SIP-AIN
Anlagenwartung

SIT Industry - IT-Lösungen
für die Industrie

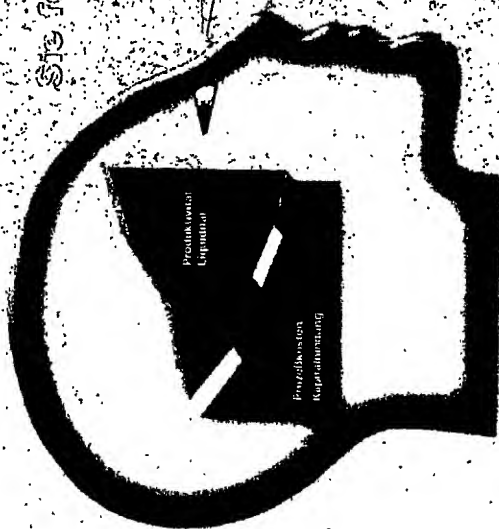
SERVTRONIC - Kunden
spezifische Diagnostik

SERAIN - Knowledge
Management

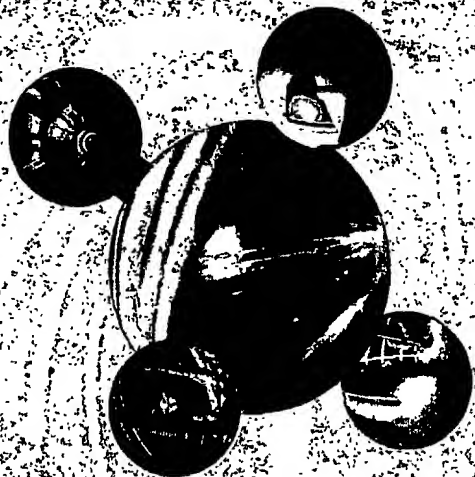
Siemens Industrial Services

Anlagenbau und
technische Dienstleistungen

Ihre Nebenprozesse
sind unsere Kernkompetenz



Sie fokussieren Ihren
Kernprozess



Wir kümmern uns um Ihre
Nebenprozesse

Steigern Sie Ihre Produktivität und Liquidität - mit Siemens Industrial Services

Industrie und Wirtschaft befinden sich im Wandel. Fortschrittliche Globalisierung und immer stärker werdender Wettbewerb bedrücken in allen Branchen. Sagen die Unternehmer vor große Herausforderungen. Sie müssen ihre Zulieferer, Hersteller und Händler organisieren und koordinieren. Interne Abläufe sowie die entstehenden Kosten müssen kontrolliert und Schrittmäßig zu entschleunigen und sich an die veränderten Marktforderungen anpassen. Diese Umstrukturierung von Organisation und Produktion führt schließlich zu einer konsequenten Konzentration

auf Kernkompetenzen. Ein wesentliches Element ist hierbei die "make or buy" Entscheidung von Nebenprozessen

Wir kümmern uns um Ihre Nebenprozesse in den Bereichen Energie, Facilities und Ersatzteil Logistik!

Durch Fremdvergabe dieser notwendigen, jedoch nicht als Kernkompetenz betrachteten Prozesse

(Nebenprozesse) können Produktivität und Flexibilität des gesamten Produktionsprozesses nachhaltig verbessert werden. Zudem sind Nebenprozesse im industriellen Umfeld häufig mit nicht unerheblichen Vermögenswerten verbunden, die sich im Anlagevermögen widerspiegeln und daher die Liquidität einer Unternehmung nicht direkt verbessern. Investitionen zur Modernisierung und Optimierung ihrer

Nebenprozesse können aufgrund fehlenden Etats und zu kurzer Amortisationszeitraum häufig nicht realisiert werden. Damit Sie diese Maßnahmen effizient durchführen können und Ihre Anlagen auch morgen noch gewinnbringend auf dem Laufenden bleiben, bietet Ihnen Siemens Industrial Services - zusammen mit Siemens Finance & Leasing - den Betrieb, Instandhaltung und die Finanzierung, für Ihre Nebenablagen

und das alles herstellerunabhängig. Wir bündeln unser Know-How für technische- und finanztechnische Lösungen und Schüren für Ihre Bedürfnisse ein angepasstes Leistungspaket

Steigern Sie Ihre Produktivität und Liquidität - mit Siemens Industrial Services!



Ihre Nebenprozesse stehen bei uns an erster Stelle...



Industrial Facility Management

Wir kümmern uns um das laufende technische Betriebesführung, die Instandhaltung und um das Management Ihrer Produktions- und Dienstleistungsgebäude sowie um die zugehörigen technischen Gewerke und Einrichtungen

Wir bieten Ihnen

- Die Analyse und Ermittlung Ihrer spezifischen Instandhaltungsanforderungen unter Berücksichtigung Ihrer Produktions- und Geschäftsziele
- Die Konzeption, Realisierung sowie den Betrieb eines Instandhaltungsstandes als zentrale Koordinations- und Meldestelle
- Die Erfassung, Planung und Optimierung von Instandhaltungsmaßnahmen mit DV-Unterstützung, von der Teilkomponente bis zum kompletten Prozess
- Die Durchführung der Instandhaltung nach DIN, VDMA bzw. internationalen Standards

... macht fit bis unters Hallendach!



Energy Services

Wir verfügen über mehr als 150 Jahre Erfahrung bei Energietechnik. Aufgrund dieses Know-How sind wir in der Lage, Ihre kompletten Anlagen für die Energieerzeugung und -verteilung kompetent zu pflegen. Unsere Spezialisten betreuen Ihren gesamten Anlagenbestand, und zwar herstellerübergreifend

Wir übernehmen für Sie

- Betriebsführung
- Contracting
- Instandhaltung

Dies gilt für alle Energieformen die Sie nutzen

- Dampf
- Druckluft
- Elektrizität
- Wärme
- Wasser

Beauftragen Sie uns mit der kompletten Bereitstellung der benötigten Energie oder nehmen Sie nur einzelne unserer Serviceleistungen in Anspruch - wir garantieren Ihnen umfassende Energie Services aus einer Hand

... und Sie produzieren günstiger!

LogisticsService

Die Instandhaltung industrieller Produktionsanlagen und -gebäude spielt eine wesentliche Rolle für die Erhaltung der Wirtschaftlichkeit Ihres Produktionsprozesses. Ihr Instandhalter wird hierbei mit verschiedenen Aufgaben betraut: im Zuge der Material- und Montage-Ersatzteilbereitstellung, korrekter, zuverlässiger und wirtschaftlicher Abwicklung dieser Prozesse ist letztlich ausschlaggebend für die Leistungsfähigkeit Ihrer Instandhaltung. Siemens Industrial Services bietet Ihnen im Rahmen seines Technischen Industriekundendienstes umfassende LogisticsServices!

Lediglich "lagern, verwalten und bewegen" wird Ihren Anforderungen nicht gerecht, deshalb "bewirtschaften" wir Ihre

- C-Teile, Hilfs- und Betriebsstoffe
- Maschinen und Instrumente
- kritischen und speziellen Ersatzteile nach Ihren individuellen Anforderungsprofilen
- Reaktions- und Verfügungszeiten
- Sicherheits- und Kostenaspekte
- stochastische Anforderungen
- Reichweitenbetrachtungen

Basierend auf Ihrem logistischen

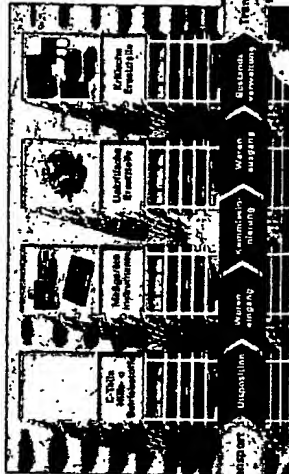
Anforderungsprofil bieten wir Ihnen

- Bereitstellung, Lieferung, Disposition
- zentrale Lagerung, DV-gestützte Bestandsführung, Lieferbereitschaft
- Ersatzteilmanagement (Leasing, Nutzung, Recycling)
- Materialwirtschaftliches Management, Materialfluss, Betrieb von Lagern, Recycling

Sie profitieren, indem Sie Ihren Instandhaltungsprozess und Ihre Kostenstruktur nachhaltig verbessern

- Fixkosten werden vermindert
- Logistik-Prozesskosten sinken
- Reduzierung der Kapitalbindung durch Optimierung Ihres Umlauf- und Anlagevermögens

... damit alles da ist, wenn, wo und wie Sie es brauchen!



steigende
Materialverfügbarkeit,
Produktivität,
Kapitalverfügbarkeit

sinkende
Kapitalbindung,
Fixkosten,
Variable Kosten

Freie Fahrt für Ihre Produktion!



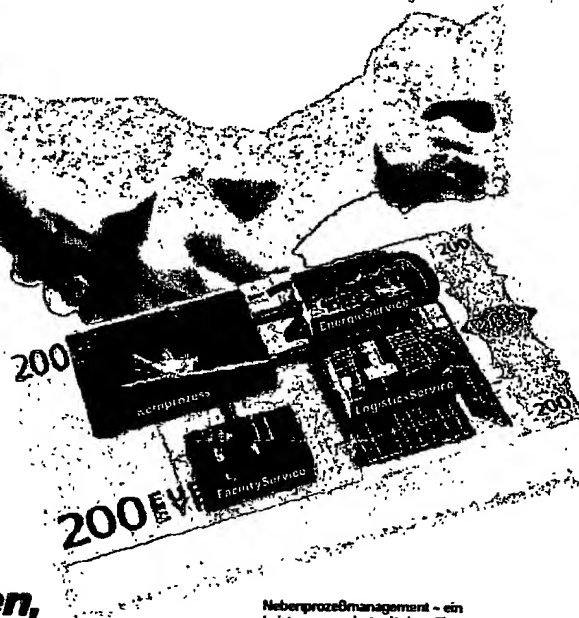
Nebenprozessmanagement und Financial Services Hand in Hand – Synergien die sich für Sie bezahlt machen...

Durch die Verbindung von technischen und finanzwirtschaftlichen Dienstleistungen eröffnen sich ganz neue Möglichkeiten, um sich den Herausforderungen unserer Industriegesellschaft erfolgreich zu stellen. Zur Erschließung dieser Möglichkeiten sind jedoch sowohl technische als auch finanzwirtschaftliche Know-how zwingend erforderlich. Durch die Zusammenarbeit von Siemens Industrial Services und Siemens Finance & Leasing verschmelzen nicht nur die erforderlichen Kompetenzen

Vielmehr sind wir der Serviceprovider, der Ihnen Sicherheit und Flexibilität bei Finanzierung und Leistungserbringung garantiert. Bauen Sie auf langfristige Sicherheit, vereint mit Flexibilität und Kreativität und nutzen Sie unser neues Leistungsangebot im Nebenprozessmanagement. Verschaffen Sie sich den unternehmerischen Freiraum den Sie brauchen!

Umfassende Optimierung Ihrer Nebenprozesse – Produktivitätssteigerung inklusive
Von der kompetenten Beratung und Konzeptionierung bis hin zur Realisierung – wir helfen Ihnen umfassend Ihre Nebenprozesse zu optimieren. Eventuell anfallende Investitionen zur Optimierung bzw. Modernisierung Ihrer Nebenprozesse werden von uns mit Hilfe individueller Finanzierungs- oder Leasingmodelle realisiert. Wir tragen so dazu bei, Ihre Liquidität und Ihre finanziellen Ressourcen zu schonen und gleichzeitig Ihre Produktivität zu steigern.

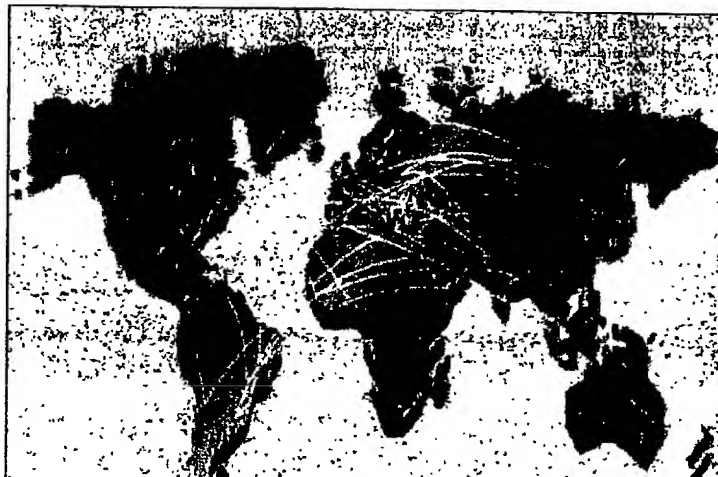
Das Sale & Lease-Back Modell – ideal für Ihre Erfolgsbilanz
Durch Leasing können Sie auch Ihre Fixkosten weiter reduzieren. Ein überzeugendes Leasingmodell hat sich hier bereits vielfach bewährt. Sie verkaufen uns Ihre prozessbezogenen Anlagenbausteine und leasen oder mieten diese wieder zurück. Die Verfügbarkeit dieser Bausteine ist für Sie dadurch gewährleistet. Sie haben darüber hinaus jedoch Ihre Liquidität und damit Ihren Investitionsspielraum nachhaltig erhöht.



... **Synergien,**
die sich für
Sie bezahlt
machen!

Nebenprozessmanagement – ein Leistungsangebot mit dem Sie rechnen können, individuell und innovativ!

Nebenprozeß-Management - für Erfolg ohne Grenzen



Immer in Ihrer Nähe

Wir verfügen über ein weltumspannendes Netzwerk, bestehend aus Siemens Niederlassungen, Stützpunkten, Logistik Centern, und können Ihnen daher überall schnelle und kompetente Betreuung vor Ort gewährleisten. In allen Fragen zum Thema Nebenprozeß-Management sind wir für Sie weltweit zur Stelle.

Die ganze Welt der Instandhaltung, mit 298 Standorten in 69 Ländern der Welt

Durch globales Best-Practice-Sharing setzen wir neue Maßstäbe auf dem Gebiet der Industrial Services. Überlassen Sie nichts dem Zufall und nutzen Sie unser Know-how zu Ihrem Vorteil: Effizienzsteigerung durch Nebenprozeß-Management.

Weitere SIMAIN Leistungsprofile zu Instandhaltungsthemen:

- Integrierte Anlageninstandhaltung
- Kraftwerks-Instandhaltung
- Instandhaltung von elektromechanischen Komponenten und Schaltanlagen
- Instandhaltung für infrastrukturelle Anlagen

Rufen Sie uns an oder schicken Sie einfach eine E-Mail und Sie erhalten umgehend das gewünschte Informationsmaterial.

Für eine individuelle Beratung in allen Fragen zur Instandhaltung stehen wir Ihnen selbstverständlich jederzeit gerne zur Verfügung.

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Siemens Aktiengesellschaft

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SIEMENS

SIMAIN - excellent results for
your power plant



**fitness
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Electronic Design &
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*Your success
is our goal*

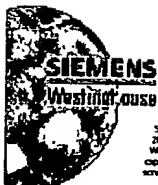
SIMAIN helps you to attain your business targets for
power plant maintenance



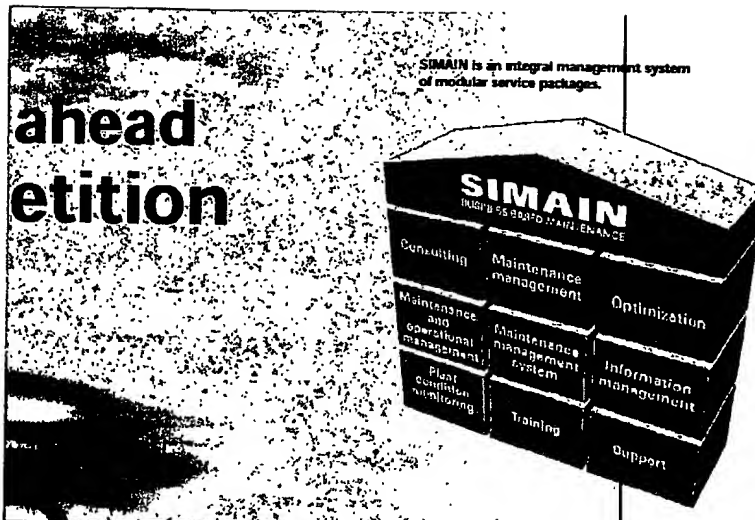
SIMAIN

BUSINESS BASED MAINTENANCE

- 1 Your targets become ours
- 2 Quality that meets your requirements:
price - performance - on-time service
- 3 Assists further development of your operational know-how
- 4 Optimizes your processes to meet your goals
- 5 Provides you with the latest technology to optimize
availability and logistics
- 6 Reduces overall costs and maintains constant quality
standards



Siemens offers technical services in over
200 countries. The experience of
Westinghouse has specifically to the
operation of our worldwide power plant
service network.



Today's power plant market

Crucial changes are currently taking place in the power-plant market worldwide. The deregulation of electricity generation markets has placed the supply networks at everyone's disposal and has increased competitive pressures. As a power plant operator, one is compelled to exploit every available opportunity to reduce operating expenses.

In a deregulated market, only the best is good enough

Siemens maintenance and operational services are committed to the highest standards. We at Siemens can offer specialists in engineering, technical support and business management. Our range of services is directed pre-

cisely towards your entrepreneurial needs.

The deregulation of the power market calls for new, innovative solutions

Outsourcing auxiliary processes enables you to optimize your cost structure. This allows you to concentrate on management of core processes and valuable plant expertise, while leaving the rest to qualified service providers.

As a result, your fixed costs are reduced.

The advantages for you

At SIMAIN we optimize all maintenance procedures and operational management. We are your dependable, professional and cost-effective partner.

Can maintenance costs be reduced by up to 50%?

Those responsible for power plant operation today are required to continually optimize their processes. SIMAIN's Business Based Maintenance management implements commercial targets according to your priorities. Experts forecast a reduction in costs of up to 50% depending on the condition of the plant.

Our maintenance service meets your entrepreneurial targets

Optimized operational and maintenance costs

SIMAIN optimizes servicing cycles and maintenance work according to the following principal: as much as necessary and little as possible. Business Based Maintenance utilizes computer-aided diagnostic systems. We function as an extension of your organization to continuously improve the profitability of your plant - involving your own staff if you wish to. Long-term partnership schemes are available to help you forecast your budget.

Common objectives

- Plant safety
- Improved return through reduction in maintenance and operating costs
- Extended plant life ensures the return of investment pays off longer
- Lasting high level of plant availability
- Reduction of planned and unplanned down time
- Preventive maintenance based on the plant's condition
- Performance enhancement
- On-going staff training
- Retrofitting work
- Emission reduction
- Minimized additional investment



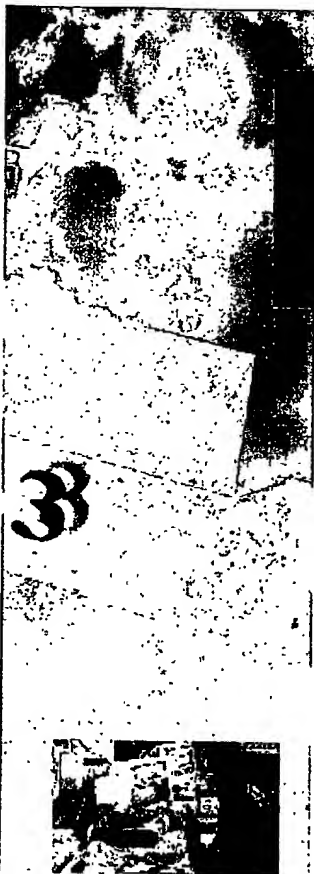
New standards

Tell us your entrepreneurial targets for your plant and on the basis of this information we can fully recommend the appropriate maintenance and business strategy. Using state-of-the-art methods and tools we can organize the maintenance processes and the staff organization required to implement them.

Saving can be easily evaluated from the key parameters listed below:

- Installed capacity per employee
- Annual energy output per employee
- Cost of operation and maintenance per MWh generated
- Plant availability

We are always at your disposal for consultation at your convenience.



Operational optimization through outsourcing

Outsourcing is a holistic optimization technique, which has been used for many years throughout the world to increase the competitiveness of innovative industries. This technique was pioneered by the motor vehicle and pharmaceutical industries.

The fundamental principle is to have an external source that is responsible for all non-core business and frees the client to concentrate on the more important core processes.

Selective Outsourcing can fulfil your economic objectives

Your top priority as a power plant operator is to run the power plant in the most economically effective way. With the economic targets in mind, you have to define concrete tasks, have them implemented and monitor their success.

This is where the SIMAIN concept comes in.

We take over responsibility for a variety of tasks which are outside your field of expertise. Our range of services extends from the management of peripheral plant maintenance right through to full plant operation covering all electrical, mechanical and business components, regardless of the manufacturer.

In every situation, outsourcing is specifically mapped and designed to guarantee success and profitability.

Leasing schemes

In certain cases, Siemens also offers you leasing schemes for auxiliary processes to enable you to optimize asset management. This approach allows you more flexibility when making decisions about strategic plans for the future.



While technology at power plants is becoming even more demanding, so are the demands on technical management. In this respect, two aspects are particularly important: maintenance and plant management, which involve considerable potential for rationalization.

How much outsourcing is profitable for you?

Hands-on experience in every plant

Our global power plant experience makes us second to none when it comes to operating highly-complex power generation plants and distribution systems. Instead of having numerous service partners, you can just rely on us. Siemens offers you expert advice for all your servicing needs. Siemens engineers will also apply all their skill and expertise when involved with other manufacturer's plants.

A partnership which pays off

A Siemens maintenance partnership is designed to follow and assist your business goals. In today's world does it make sense to do all maintenance work in-house? Let us assist you in the ideal balance between our services and your in-house work.

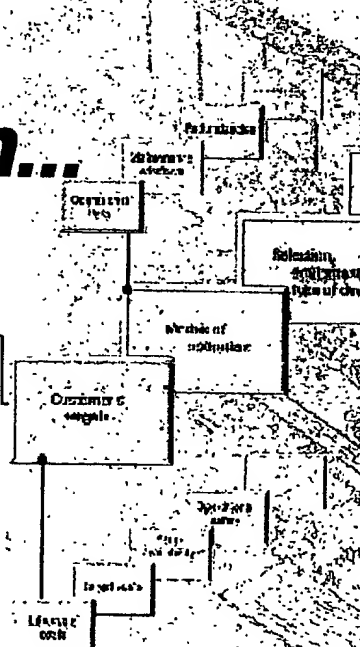
Total concentration on your core processes

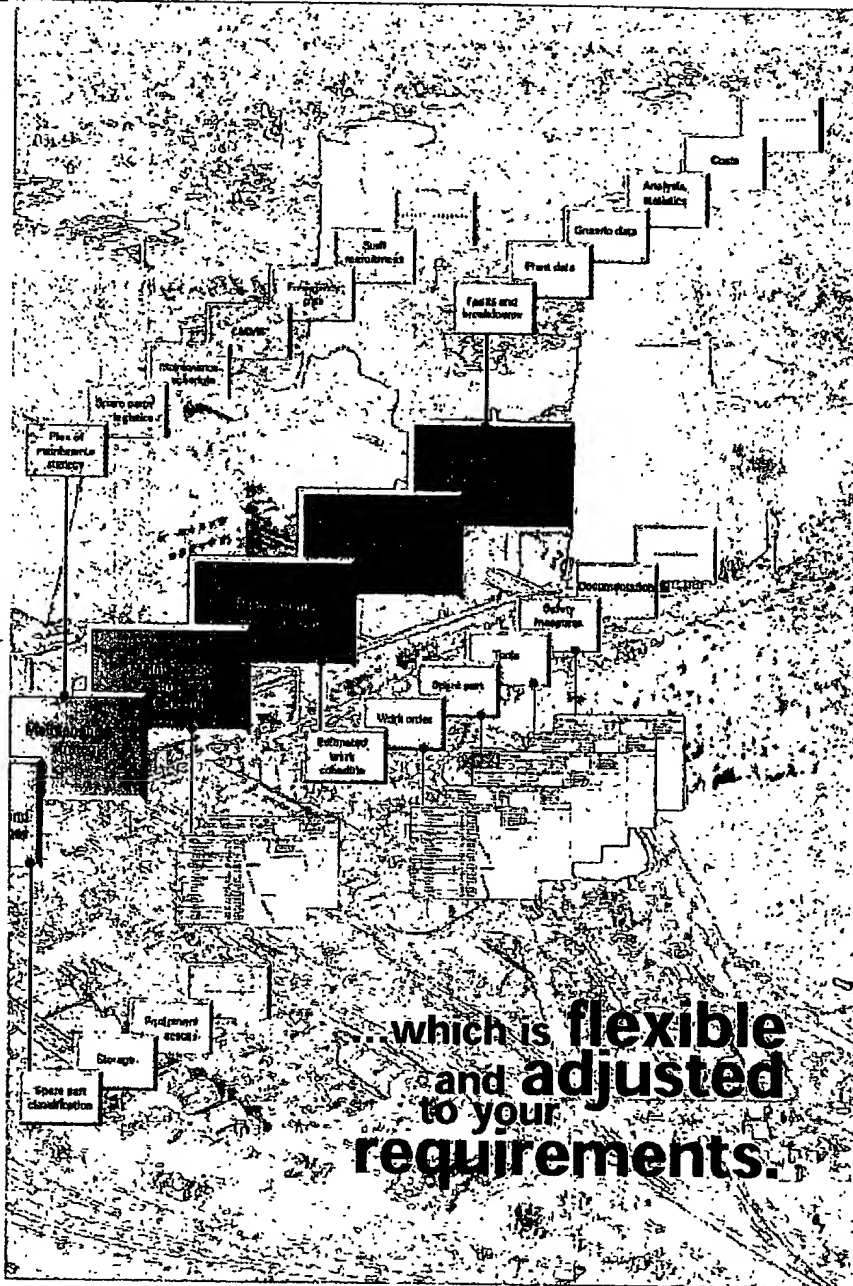
Focusing your attention on the actual production-related processes can improve your cost structures and increase the flexibility of your resource planning. Even if you entrust the entire operation of your power plant to SIMAIN, it will be in safe hands - we already have successful global experience of establishing joint operating companies with power plant owners.

**There is a
method
in our *system*...**

Total or partial outsourcing

		OUR SIMAIN	
		Service	Plant
Operation and maintenance	Operation	Full-time	Full-time
	Operation	Part-time	Part-time
	Operation	On-call	On-call
	Operation	Emergency	Emergency
Maintenance and repair	Maintenance	Full-time	Full-time
	Maintenance	Part-time	Part-time
	Maintenance	On-call	On-call
	Maintenance	Emergency	Emergency
Plant	Plant	Full-time	Full-time
	Plant	Part-time	Part-time
	Plant	On-call	On-call
	Plant	Emergency	Emergency
System and network	System	Full-time	Full-time
	System	Part-time	Part-time
	System	On-call	On-call
	System	Emergency	Emergency
Core plant plant			

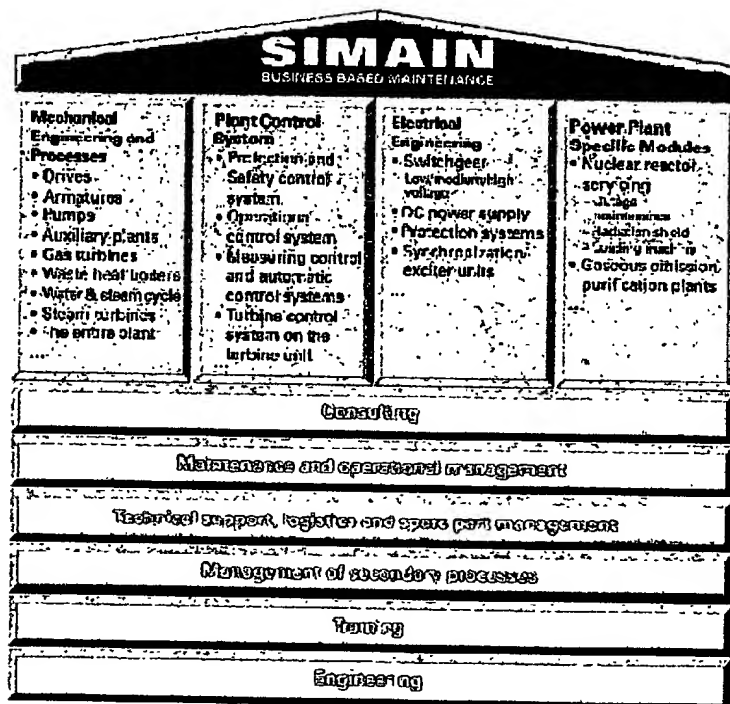




which is **flexible**
and **adjusted**
to your
requirements.

A brief outline of our range of services for power plant maintenance and operational management

- Equipment
- Components
- Systems
- Subsidiary plants
- Entire plant



SIMAIN provides all those services you may need to operate your power plant. The entire package is designed and calculated for your individual needs. Let your local SIMAIN agent prepare a quotation for you. You will find a summary of our service portfolio on these pages.

Professional maintenance: Plants operate longer with SIMAIN

A summary of the technical services for operational management and the maintenance of power plants

Construction phase

During the planning phase all requirements for the subsequent operation of the plant are determined and implemented.

At this early stage, the technical solutions required to attain the targets related to the construction of the plant can be best implemented.



The objective of lowest life-cycle costs can also be planned, since all phases of the plant's life, and namely the operational phase are integrated with an adapted maintenance program. We can assist you with the planning and the selection of the proper equipment for the operation and maintenance of the plant. We place our extensive experience of assembly, commissioning and acceptance at your disposal, thus ensuring that the quality and efficiency of the plant meets your highest expectations.

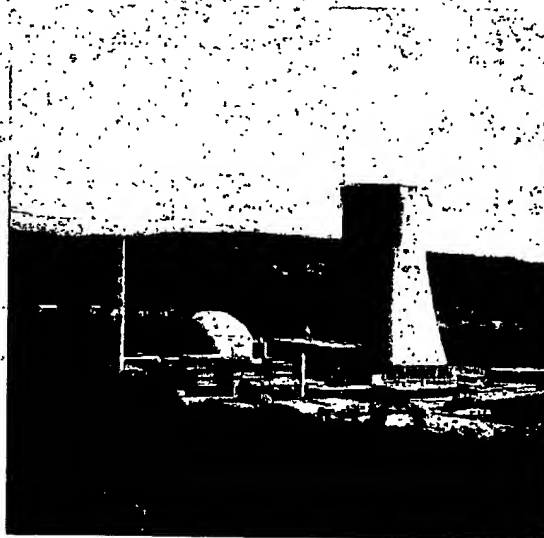
The plant should function properly from day one so that your commercial objectives can be met. That is why maintenance services should be prepared before the plant commences operation. This includes: establishing the necessary inspection schedules, quality manuals and procedural instructions, introducing a maintenance management system adapted to your operational requirements, the setting up of a uniform documentation structure and the required spare parts strategy.

Operational phase

During the operational phase all the SIMAIN service packages of the "Integral Power Plant Maintenance" program will be applied.

Consulting

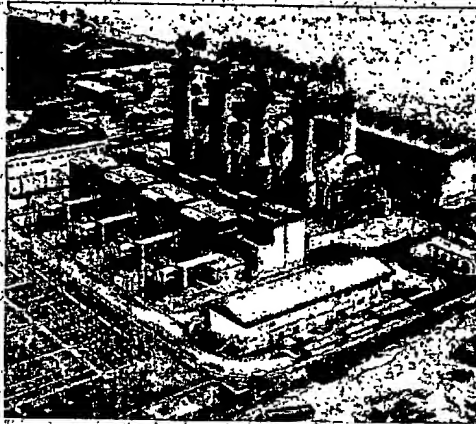
- Targets
- Analysis of status quo
- Concept (technical, commercial, maintenance partnership schemes, leasing schemes)
- Business strategy
- Definition of job specifications
- Agreement on implementation
- Recruitment of personnel
- Staff transfers
- Controlling



Operational phase

Maintenance

- Inspection
Determination and assessment of actual condition of the plant by means of the latest measuring techniques, even during the plant's operation
- Servicing
Maintaining the operational efficiency of the plant by regular preventive measures in order to preserve the target condition of the plant
- Repair
Action taken to restore the target condition, i.e. the specified performance of the plant
- Application of the latest maintenance techniques
Condition-oriented maintenance using analytical systems such as thermography, vibration measurement and machine diagnostics
- Use of innovative operational control and management systems



Troubleshooting

- Analyses
Via hotline or teleservicing
- Remedial action
Via hotline, teleservicing or on-the-spot action
- Suggestions for optimization
The setting up of appropriate preventive measures

Technical back-up

- Workshop services
Repair, construction and calibration of components
- Spare parts
Advising, ordering, storing and transportation including all documentation
- Tools and instrument service
Advice on appropriate tools and measuring equipment and their supply
- 24-hour control centre
Answering all reports and queries around the clock and return of calls by qualified engineers within the stipulated time limit
- Teleservicing
On-line connection between our system specialists and your process-control system to enable rapid fault diagnosis and direct access to the system

Operational management

- Organization, planning and execution
For operation of systems, subsidiary plants and complete plants
- Installation and operation of workshops, stores, buildings and infrastructure adhering to guaranteed performance targets
- Guarantee of availability
- Development of partnership schemes to suit individual customer requirements
- Consulting business review process

Operational phase

Training and instruction

- Draft concept
- Advice on training measures
- Project qualification
- Comprehensive process control and electrotechnology
- Personnel qualification
- Maintenance manager, service manager, shift supervisor
- Maintenance workshops
- Methods, working techniques and work safety

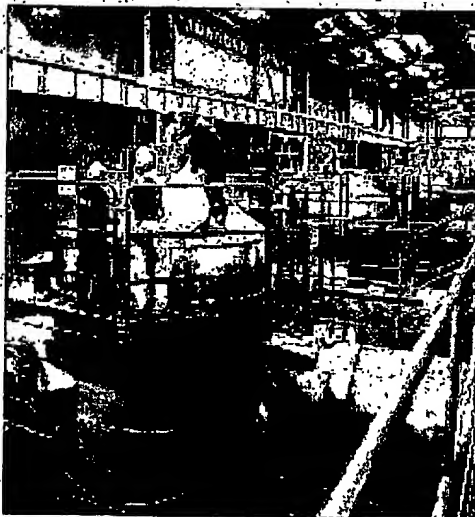
Management of auxiliary processes

A new concept of work sharing. Our customers can concentrate on the core processes, and entrust the supporting peripheral auxiliary processes entirely to Siemens.

At your request, we can ease your workload by taking over selected partial service packages with technical and commercial responsibility.

Modernization (retrofitting) and reconstruction

- Basis for measures
- Customer targets, asset condition assessment, studies, solution concepts
- Plan of action
- Evaluating solutions, classification of interfaces, viability
- Project implementation from a single source
- Planning, controlling, reporting
- Coordinating process sequences between status quo and new projects



Dismantling and recycling



At the end of the commercial service life of a power plant, dismantling the power plant requires qualified management and specialized know-how in dismantling techniques and environmental protection.

Our experience, particularly with nuclear installations, guarantees that these tasks will be economically undertaken in full compliance with all applicable standards and regulations.

We can specifically assist you in:

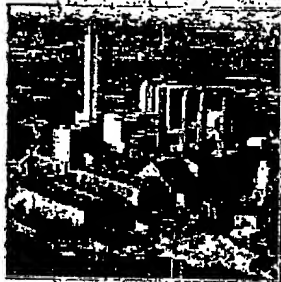
- De-commissioning
- Conservation
- Planning the dismantling and disposal
- Dismantling
- Local removal of plants or equipment
- Disposal in compliance with regulations

A few examples of our maintenance track record

SIMAIN for fossil fuel power generation

- Kava Baji (Indonesia) 400 MW
- Paka (Malaysia) 800 MW
- Pasir (Malaysia) 450 MW
- Santa Rita (Philippines) 1000 MW
- Swentibold (Netherlands) 242 MW
- Tiefstack (Germany) 1000 MW
- Yallourn (Australia) 1450 MW

At the above mentioned power plants we developed the maintenance strategy, took over maintenance management, took responsibility for spare parts, logistics, appointed the maintenance staff and operated the plant with the scheduled availability.

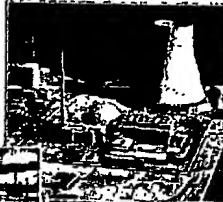


SIMAIN for nuclear power plants

German nuclear power plants are the international leaders for productivity. Their plant and output availability have been the best in the world for decades. We have contributed to this success. We are represented by established service support centers at 19 German nuclear power plant locations.

- These include:
- Biblis A/B
 - Emsland
 - Gundremmingen B/C
 - Krummel
 - Neckarwestheim 1/2

Siemens servicing expertise is well-trusted throughout the world. We also ensure plant efficiency at eleven foreign nuclear power plants.



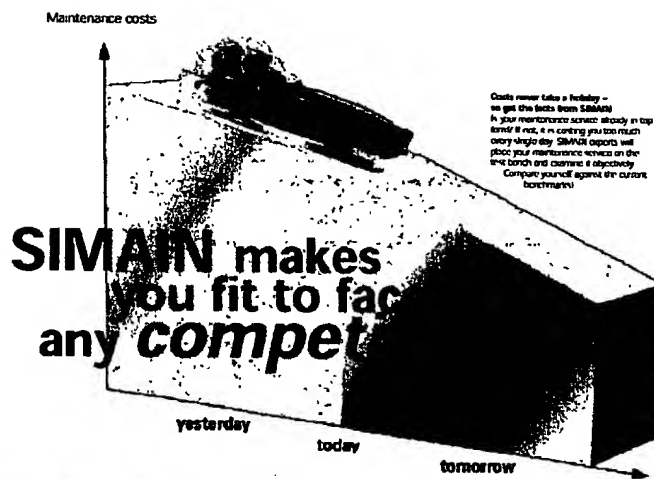
SIMAIN for hydroelectric power plants

Hydroelectric power plants built and operated by Siemens range in output from a few kW to several hundred MW (e.g. Itaipu, Brazil, 700 MW). New-generation power generators have been equipped with integrated sensors to collect measurements continuously during operation, so that preventive maintenance action can be taken when necessary. With SIMAIN, hydroelectric power plants are continuously monitored by online monitoring and I or telemonitoring and operate at maximum efficiency. The abilities of our highly qualified service staff guarantee high standards of reliability throughout the world for both our own and other power plants. We regularly participate in improvement work at plants which include those listed below:

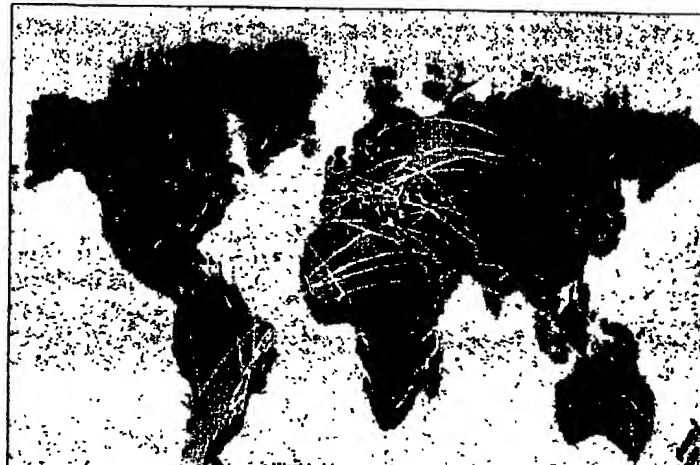
- Alu Company (Suriname) 5 x 40 MVA
- HEW, Geesthain (Germany) 3 x 45 MVA
- Schluchsewerke, Wey (Germany) 4 x 300 MVA
- Jeng River, Gturu (Kenya) 2 x 95 MVA
- Tiroler Wasserkraftwerke, Prutz (Austria) 40 MVA



Place your maintenance procedures on the test bench



Worldwide support



Worldwide support next to your door:

- 233 locations
- 69 countries

This is our power plant maintenance brochure.

Please ask for the other SIMAIN service profiles on the following topics:

- Auxiliary process management
- Integral plant maintenance
- Maintenance for infrastructure and transportation
- Maintenance of electro-mechanical components and switchgear

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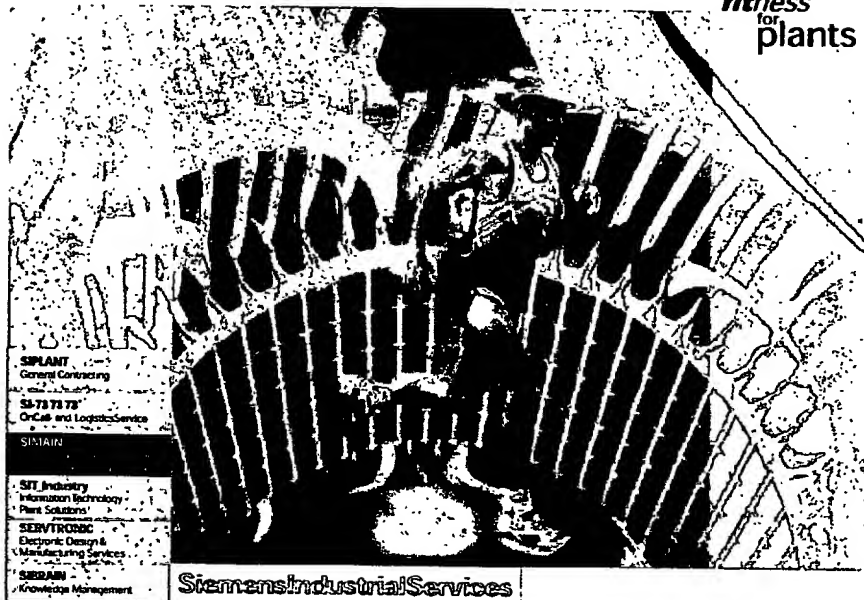
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 Draw No. 15.000.004.27530
 Mark Worburg & Design, Nürnberg

SIEMENS

Motor Management Program Tailored for improved efficiency

*fitness
for
plants*



SIPLANT
General Contracting
55-7575 75
OnCall and LogisticsService

SIMAIN

SIT Industry
Information Technology
Plant Solutions

SERVITROBIC
Electronic Design &
Manufacturing Services

SIBRAM
Knowledge Management

Siemens Industrial Services

your success
is our goal

Switch over to lower costs

Worldwide experience in Business Based Maintenance.

Your business strategy should take in account the ongoing changes resulting from globalization, technical advances and increasing competition. The maintenance is an important part of this strategy.

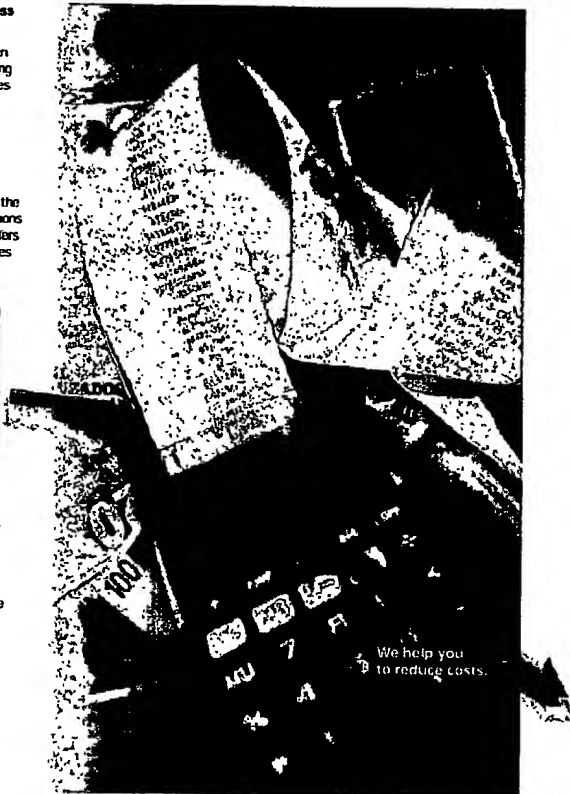
In developing the Siemens Motor Management Program (MMP), we used many years of experience and the confidence gained by excellent relations with our customers. The program offers a broad range of maintenance services designed to provide comprehensive, vendor-independent solutions.



Recognizing your best choice.

The Motor Management Program provides the following benefits to your organization:

- Increased equipment reliability and availability
- Reduced costs through a proactive Business Based Maintenance approach
- Minimized downtime
- Optimized asset management
- Capital solutions
- Fast response when and where you need it
- Energy reduction



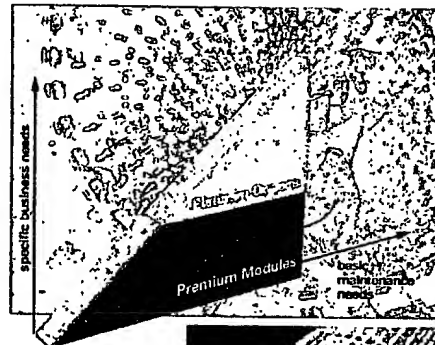
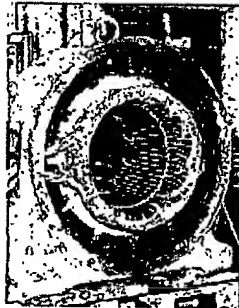
We help you to reduce costs.

Motor Management Program Premium Modules

Your choice for maintenance
excellence.

Our Motor Management Program
distinguishes between:

- ▶ Premium Modules which are
technology-oriented and cover your
basic maintenance needs
- ▶ Platinum Options that take you
into Business Based Maintenance
solutions, tuned to the special
needs of your business



The Premium Modules focus on in-
creased reliability and availability.
They can add the bottom-line dollars
that drive your business.



Motor Management Program - Premium Modules

On-Site Motor Services	Support Services	Inventory Management Services	Consulting & Engineering Services	Information Management
Condition Monitoring	Overhaul, Repair & Rewind	Inventory Optimization & Reduction	Application Engineering	System Design and Interface
24hr Emergency Response Service	Motor Upgrade	Storage & Maintenance	Reliability Improvement	Motor Data Management
Preventive & Corrective Maintenance	Replacement Motor Supply	Shared Inventory	Motor Condition Assessment	
		Inventory Reliability Verification	Motor Management Review	
Program Management				

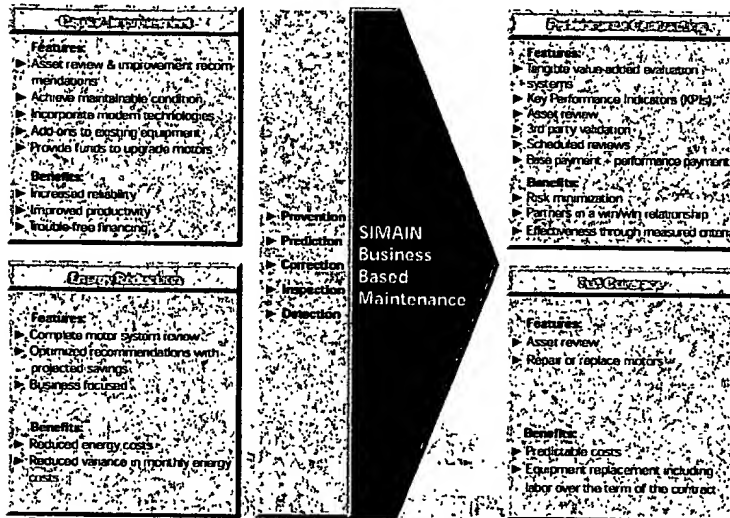
Motor Management Program Platinum Options

Maintenance alignment to your business objectives

By selecting appropriate
premium modules, enhanced by
platinum options, you ensure

maintenance excellence
Any maintenance problems will be
spotted and corrected early.

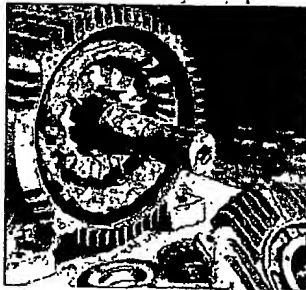
before they can develop into
expensive breakdowns



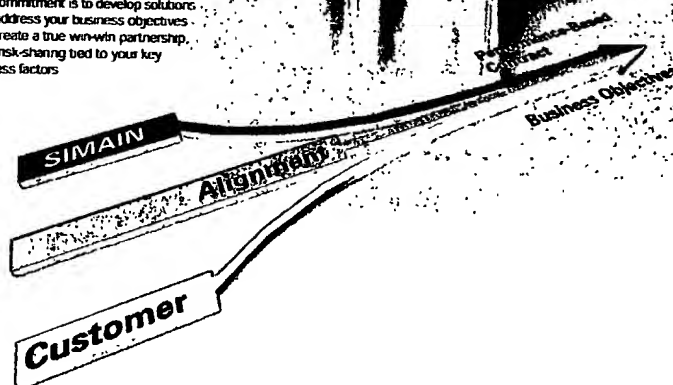
You have the choice: From service provider to business partner

It's more than just a job.

SIMAIN Business Based Maintenance is a process that first defines your equipment and maintenance needs in terms of your business goals. The next step is to develop uniquely tailored maintenance strategies that will help you to reach your objectives. These proactive strategies, complemented by modern monitoring technologies, will improve your equipment reliability and positively impact the bottom line. Most importantly, the success of these changes will be achieved by working closely together with your employees to sustain improvements.



Our commitment is to develop solutions that address your business objectives and create a true win-win partnership with risk-sharing tied to your key success factors.



Discover the better alternative for electro-mechanical maintenance



For more information contact your local Siemens office or the address below

You can learn more about us on our web page: www.siemens.com/simain

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Siemens Aktiengesellschaft

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SIEMENS

SIMAIN Instandhaltung von Infrastruktur- und Verkehrsanlagen



**fitness
for
plants**

SPLANT Anlagenrichtung
SI-737373 - Technischer Industrie-Kundendienst
SIMAIN Instandhaltung
SIT Industry IT-Lösungen für die Industrie
SERVTRONIC Kundenspezifische Elektronik
SIBRAIN Knowledge Management

Siemens Industrial Services

Anlagenbau und
Technische Dienstleistungen

*Ihr Erfolg
ist unser Ziel*

Ihr Wettbewerbsvorsprung durch Instandhaltungs-Outsourcing



Wenn ein Flugzeug in Buenos Aires, in London, Kopenhagen oder Lissabon landet, wenn der Straßenverkehr durch die Innenstädte von Rom oder Athen geleitet wird, wenn der Skytrain durch Bangkok oder der LRT durch Kuala Lumpur fährt – dann tragen wir stets mit dazu bei. Als größter Technischer Dienstleister für Industrie, Energie und Infrastruktur erbringt Siemens professionelle Instandhaltungsdienstleistungen in aller Welt. Und zwar nicht nur für Systeme und Anlagen von Siemens, sondern herstellerübergreifend für sämtliche Maschinen und Ausrüstungen von Infrastruktur- und Verkehrsanlagen. Mit SIMAIN Business Based Maintenance, dem neuartigen Instandhaltungskonzept, können wir auch für Sie die Effizienz Ihrer Instandhaltung optimieren.

Gehört Instandhaltung zu Ihrem Kerngeschäft?

Ein sehr komplexes Thema für Betrieb und Instandhaltung von

- Flughäfen und Fluggesellschaften
- Schiffen und Hafenanlagen
- Einrichtungen und Anlagen für den Straßen- und Schienenverkehr

ist und bleibt die Anlageninstandhaltung

Sie ist für den Geschäftserfolg unverzichtbar. Aber sie erfordert aufwendige Arbeits- und Managementprozesse und verursacht erhebliche Kosten. Vergleichen Sie einmal Ihre Situation. Je nach Betrieb macht die Instandhaltung heute 5 – 40 % der laufenden Kosten aus!

Je stärker dieser Aufwand bei Ihnen zu Buche schlägt, desto interessanter ist eine nachhaltige Rationalisierung Ihrer Instandhaltung. Effizienz lässt sich heute auch ohne Qualitätseinbußen steigern. Allerdings: Nur wenn man Instandhaltung wie ein profitables Kerngeschäft betreibt, lassen sich diese Potenziale in vollem Umfang für Sie realisieren.

SIMAIN Business Based Maintenance – unsere Lösung mit System

Siemens bietet professionelle Instandhaltungsdienstleistungen in aller Welt. Und zwar nicht nur für Systeme und Anlagen von Siemens, sondern herstellerübergreifend für sämtliche

Produkte und Systeme in Ihrem Unternehmen. Damit gehört Siemens zu den ganz wenigen Anbietern von Instandhaltungsdienstleistungen, die überall zu Hause sind – technisch und geografisch.

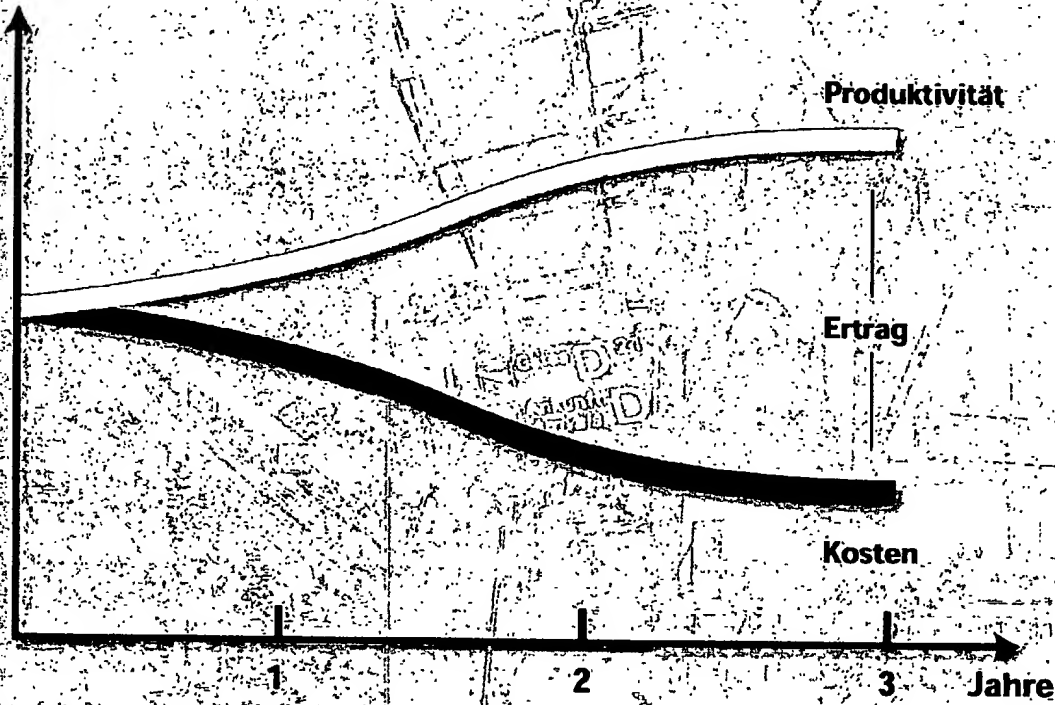
Das SIMAIN Leistungsspektrum umfasst

- ▷ strukturierte Vorgehensweise,
- ▷ individuell auf Kundenwünsche zugeschnittene Lösungen,
- ▷ einmalige Prozesse und Prozeduren,
- ▷ definierte und gemeinsam vereinbarte Instandhaltungsstrategien

**Weniger Komplexität,
größerer Focus auf Ihre
Kernkompetenzen,
gesteigerte Leistung und
Kosteneinsparungen – SIMAIN
Business Based Maintenance**



Die Resultate rechnen sich für Sie



Mit Siemens als Partner und dem Instandhaltungskonzept SIMAIN schaffen Sie Ergebnisse, auf die es ankommt

- ▶ Nachhaltige Leistungssteigerung durch eine effizientere Instandhaltung. Ihre Anlagenrentabilität wächst um 10 - 50 %
- ▶ 10 - 30 % weniger Instandhaltungskosten.

SIMAIN - in vielen Branchen erfolgreich

- ▶ Flughäfen
- ▶ Fluggesellschaften
- ▶ Schiffsanlagen
- ▶ Hafenanlagen

- ▶ Schienen-Verkehrsanlagen
- ▶ Straßen-Verkehrsanlagen
- ▶ Automobilbau
- ▶ Bergbau
- ▶ Chemie
- ▶ Infrastruktur für Logistikbetriebe
- ▶ Papier und Zellstoff
- ▶ Stahlerzeugung
- ▶ Wasser- und Abwasseranlagen

Mit 296 Niederlassungen in 69 Ländern können wir für Sie beides miteinander verbinden, globale Zusammenarbeit und Service vor Ort. Keine Frage, ob groß oder klein - wir haben die Lösung nach Maß für Sie. Erfahren Sie mehr über SIMAIN Business Based Maintenance

Sie sind erfolgreicher mit SIMAIN Business Based Maintenance



Ihr Instandhaltungs-Partner für alle Gewerke

Koordinieren Sie nicht umständlich mehrere Spezialdienstleister. Siemens ist der Instandhaltungspartner für sämtliche Anlagentechniken – gewerkeübergreifend für

- Elektrotechnik,
- Mechanik und
- bauliche Gewerke

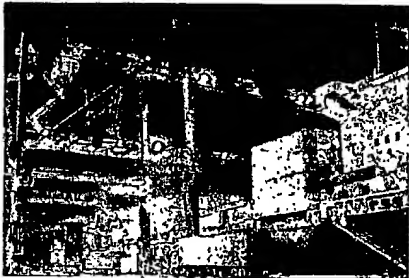
Die Vorteile für Sie liegen auf der Hand. Durch das herstellerübergreifende Know-how können wir auch als Generalunternehmer alle Arbeiten erbringen, die Verkehrseinrichtungen, Hafenanlagen, Schiffe und Airports auf dem Laufenden halten. Den Umfang der technischen Verantwortung, die Siemens für Sie übernimmt, bestimmen Sie – ganz individuell. Das erprobte Konzept dahinter ist jedoch stets identisch: es ist SIMAIN – die geschäftszielorientierte Instandhaltung.

SIMAIN Business Based Maintenance

SIMAIN ist ein Konzept, das sämtliche Instandhaltungstätigkeiten individuell an Ihren vorgegebenen Unternehmenszielen ausrichtet. Damit erzielen Sie als unser Auftraggeber z.B.

- Mehr Produktivität
- Höhere Anlagenverfügbarkeit
- Größeren Unternehmensertrag

Ihre unternehmerischen Ziele machen wir uns zu Eigen, um daraus unmittelbar alle für Sie erforderlichen Technischen Leistungen abzuleiten – und das alles mit niedrigen Kosten.



„das SIMAIN Konzept:
Ein Fitness Programm für Ihre
technischen Anlagen“

Mit diesen sechs Schritten zur
Umsetzung des „Fitness Plans“
für Ihren Unternehmen und Ihre
Anlagen sind Sie stets fit für
den globalen Wettbewerb.

Schlüssel zum Erfolg

Die Zusammenarbeit ist absolut erfolgsorientiert. Im Rahmen einer Win-Win-Partnerschaft vereinbart Siemens mit Ihnen leistungsbezogene Vergütungssysteme. Über Erfolgskennzahlen, den sogenannten „Key Performance Indicators“ (KPIs), lassen sich die erreichten Verbesserungen messen und vereinbarungsgemäß honorieren – Ihr Erfolg ist damit unser Antrieb. Die Art und Gewichtung dieser Leistungskennzahlen hängt stets ab von den Inhalten des Vertrages und Ihren damit verbundenen Geschäftszielen. Im Falle eines vollständigen Outsourcings der Anlageninstandhaltung sind beispielsweise folgende Leistungskennzahlen üblich:

- Sicherheit,
- Verfügbarkeit,
- Reduzierung der Betriebskosten
- ..

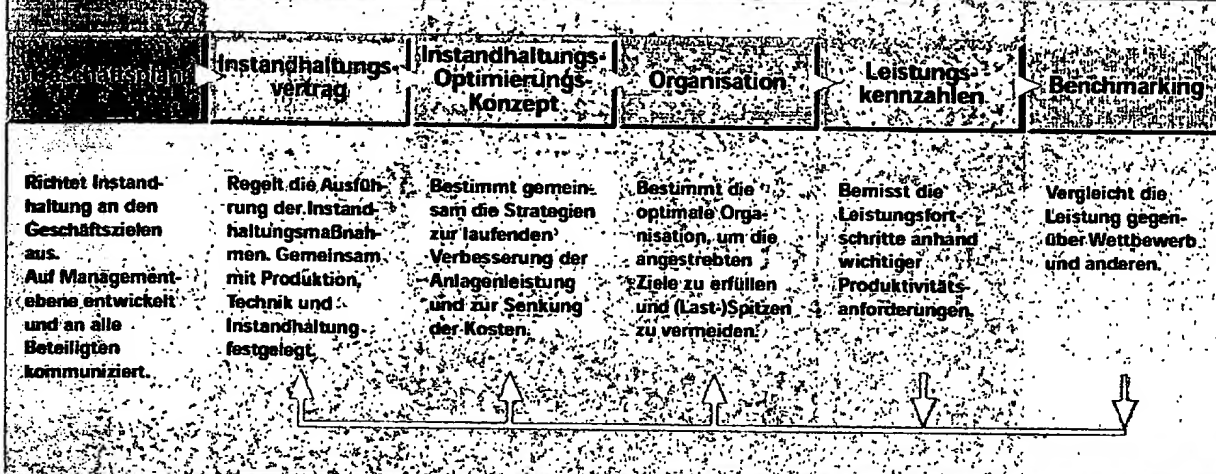
Die Gewichtung dieser Erfolgskennzahlen ist abhängig von Ihren individuellen Geschäftszielen und Wünschen.

Planbare Leistungen, überschaubare Kosten

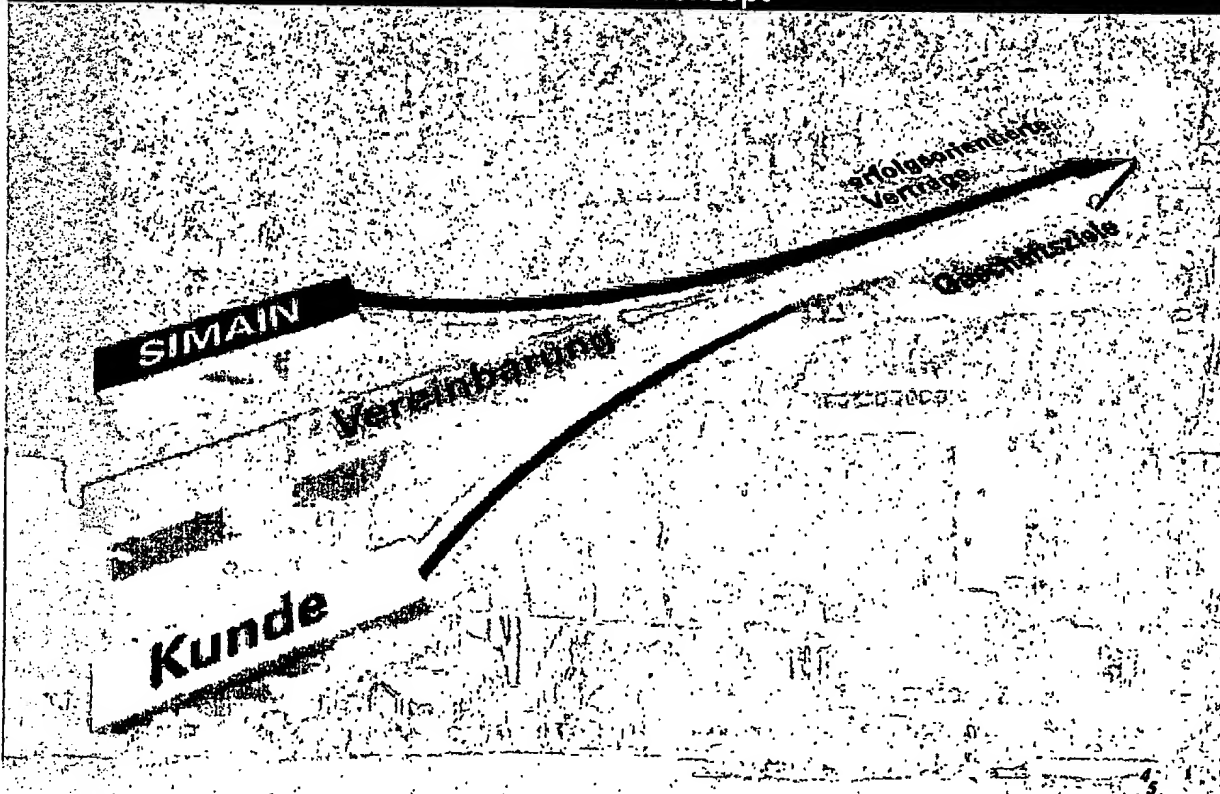
Die Basis von SIMAIN bildet eine transparente Kostenkalkulation. Für regelmäßige Arbeiten ist auch ein Contracting zu Festpreisen möglich. Sie können Ihre Instandhaltungskosten endlich realistisch planen und verfügen stets über eine zeitnahe Kostenkontrolle.

SIMAIN – Fitness für Ihre Anlagen

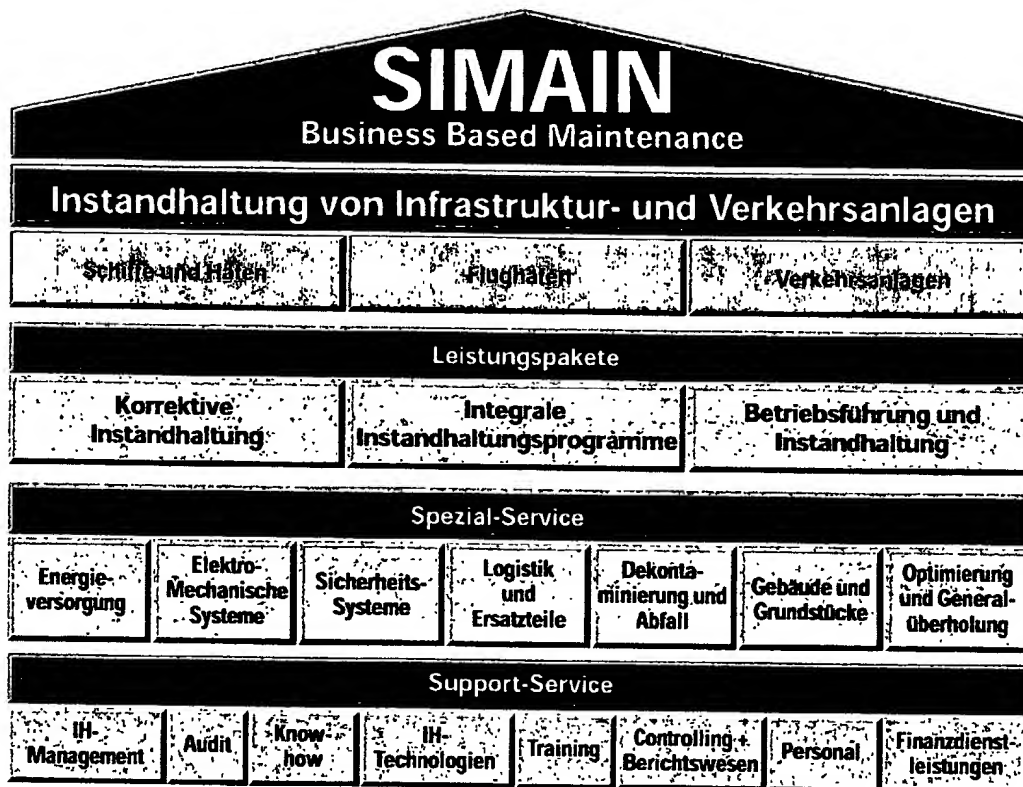
Das SIMAIN Fitness Programm



Das SIMAIN Konzept



Das modulare Leistungsangebot nach Maß



Das SIMAIN Konzept bietet Ihnen die Möglichkeit, genau die Leistungen auszuwählen, die Ihren Anforderungen entsprechen – vom ganzheitlichen Outsourcing bis hin zu individuellen Spezial-Services und Support-Leistungen

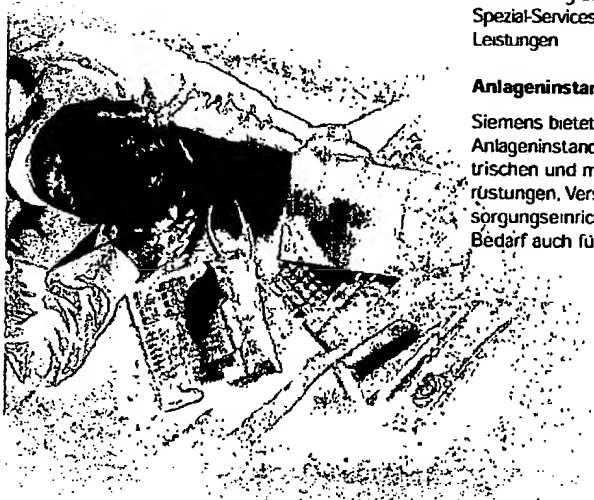
Anlageninstandhaltung von A bis Z

Siemens bietet Ihnen die komplette Anlageninstandhaltung für Ihre elektrischen und mechanischen Ausrüstungen, Versorgungs- und Entsorgungseinrichtungen sowie bei Bedarf auch für Ihre Gebäudetechnik.

Die Anlageninstandhaltung umfasst:

- Einführung und Optimierung von computergestützten Instandhaltungs-Management-Systemen
- Ersatzteilmanagement
- Geplante Überholungen
- Geplante zustandsorientierte Instandhaltung
- Korrektive Instandhaltung
- Personaleinsatz
- Präventive Instandhaltung
- Strategie-Entwicklung und -Optimierung

Mit leistungsbezogenen Verträgen richten wir alle Instandhaltungsdienstleistungen auf Ihren jeweiligen Bedarf aus



Wir stellen Ihnen Ihr individuelles Leistungspaket zusammen

Alle Instandhaltungsleistungen unseres Hauses lassen sich ganz nach Ihrem Bedarf zu einem maßgeschneiderten Paket zusammenstellen. Dazu bieten wir Ihnen auf Basis unserer **Spezial-Services** die Wunschkombination von:

- ▷ Korrektiver Instandhaltung
- ▷ Integralen Instandhaltungsprogrammen
- ▷ Betriebsführung und Instandhaltung

Zusätzlich können Sie für die Bereiche der elektromechanischen Instandhaltung unsere zwei Sonderprogramme nutzen:

- ▷ Technisches Support Programm (TSP)
- ▷ Motor Management Programm (MMP)

Diese beiden Programme stellen wir Ihnen gern ausführlich vor. Bitte fordern Sie einfach unsere separaten Broschüren dazu an

Spezial-Services

Zu jedem von unseren Leistungspaketen können Sie die nachfolgend aufgelisteten Spezial-Services nutzen. Diese Instandhaltungsleistungen orientieren sich nach typischen Anlagentechniken und -komponenten, die Sie einzeln oder integriert betreuen lassen können. Auswahl und Umfang richten sich ganz nach Ihrem Bedarf

- ▷ **Energieversorgung**
Alle Anlagen und Anlagenkomponenten, die mit Hochspannung, Mittelspannung, Niederspannung, Blockheizkraftwerk, Notstromdiesel etc. zu tun haben.
- ▷ **Elektromechanische Systeme**
Die gesamten Elektromechanischen Systeme, die Ihre Anlagen innen oder außen zum Laufen bringen (z.B. Klima und Lüftung, Beförderungssysteme, etc.)
- ▷ **Sicherheits-Systeme**
Präventive Instandhaltung für die sichere Funktionalität aller Systeme wie Zutrittskontrolle, Videouberwachung, Brandmeldeanlage, Gepäckdurchleuchtung etc.

▷ Logistik und Ersatzteile

Wir sorgen dafür, dass Ihr Kapital optimal eingesetzt wird

▷ Dekontaminierung und Abfallentsorgung

Professionelle Reinigung von elektronischen Leiterplatten und elektronischen Ausrüstungen sowie die Instandhaltung von Entsorgungsanlagen wie z.B. von Abwasseranlagen

▷ Gebäude und Grundstücke

Wir bieten die komplette Dienstleistungspalette an, vom Reinigungsservice innen und außen bis hin zur Ausbesserung von Schäden an Gebäuden und Straßen

▷ Optimierung und Generalüberholung

Um die Produktivität und Verfügbarkeit Ihrer Anlagen zu steigern, helfen wir sowohl mit Optimierung und Modernisierung Ihrer Anlage als auch mit einer Generalüberholung

Support-Service

In dem Instandhaltungskonzept SIMAIN bilden die Support-Leistungen ein wichtiges Fundament. Sie orientieren sich an technikenunabhängigen Leistungen im Rahmen der modernen Instandhaltung. Der Nutzen zählt sich individuell für Sie aus

Instandhaltungs-Management

- ▷ Strategie-Entwicklung und -Optimierung
- ▷ Instandhaltungsplanungs-Systeme

Audit - Überprüfen der bisherigen Instandhaltung

- ▷ Durch unser Prozess-Know-how, können wir Sie dabei unterstützen, die eigene Organisation objektiv zu bewerten und Optimierungspläne zu entwerfen

Know-how

- ▷ Um weltweites Best-Practice-Wissen und Erfahrung zu garantieren, haben wir ein Intranet-Informationsnetzwerk aufgebaut.

Instandhaltungs-Technologie

- ▷ Zustandserfassung
- ▷ Online-Sensorik
- ▷ Entscheidungs-Analyse-Tools

Training

- ▷ Instandhaltungs-Management
- ▷ Technologien zur vorausschauenden Instandhaltung
- ▷ Instandhaltungs-Systeme

Finanz-Controlling & Berichterstattung

- ▷ Aussagestarke Analysen über bisherige Vertragsverläufe und weiterführende Prognose

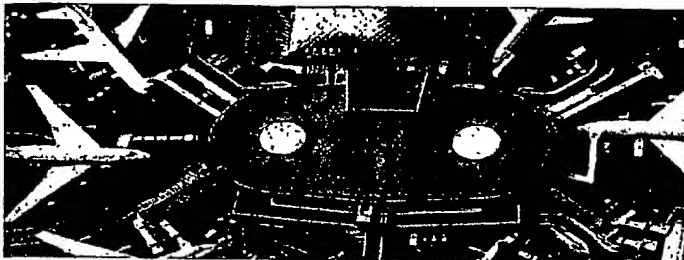
Personal

- ▷ Rekrutierung und Management der Mitarbeiter, die für die Instandhaltung zuständig sind

Durch den Zugriff auf unsere Support-Leistungen können Sie unmittelbar von der weltweiten Erfahrung profitieren, die SIMAIN aus zahlreichen Bereichen der Industrie mitbringt.



SIMAIN Instandhaltung von Flughafenanlagen



Integrale Instandhaltungsleistungen für sämtliche Flughafen-Anlagen und -Systeme

Ob es um Bodenkontrolle, Gepäck- und Frachtlogistik, Passagier-Informationssysteme oder um Sicherheits- und Gebäudetechnik, Transporteinrichtungen, technische Dienstleistungen, Betrieb und Wartung oder um weitere Bereich geht – SiemensIndustrialServices ist Ihr leistungsfähiger und zuverlässiger Partner für alle Abläufe zwischen Landung und Start. Und als eines der ganz wenigen Unternehmen weltweit verfügen wir über Referenzen in allen Aufgabenbereichen

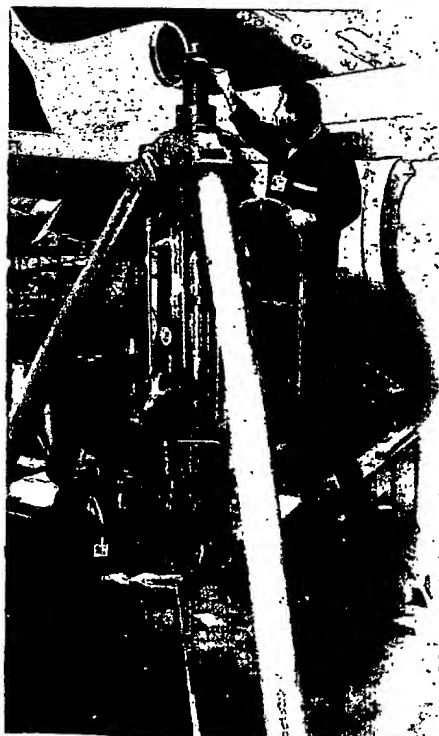
Wir bieten Ihnen beides: große Erfahrung und Fachwissen im Umgang mit allen gängigen Systemen, Prozessen und Technologien. Unsere Leistungen reichen von der Instandhaltung bis hin zur vollen Betriebsverantwortung sämtlicher Airport-Bereiche. Die SIMAIN Leistungen können wir speziell für Sie so definieren, dass die geschäftlichen und betrieblichen Anforderungen Ihres Flughafens über die gesamte Nutzungsdauer gewährleistet sind. Dabei stellen wir selbstverständlich sicher, dass alle internationalen Vorgaben und Standards für Sicherheit, Gesundheit und Umweltschutz eingehalten werden.

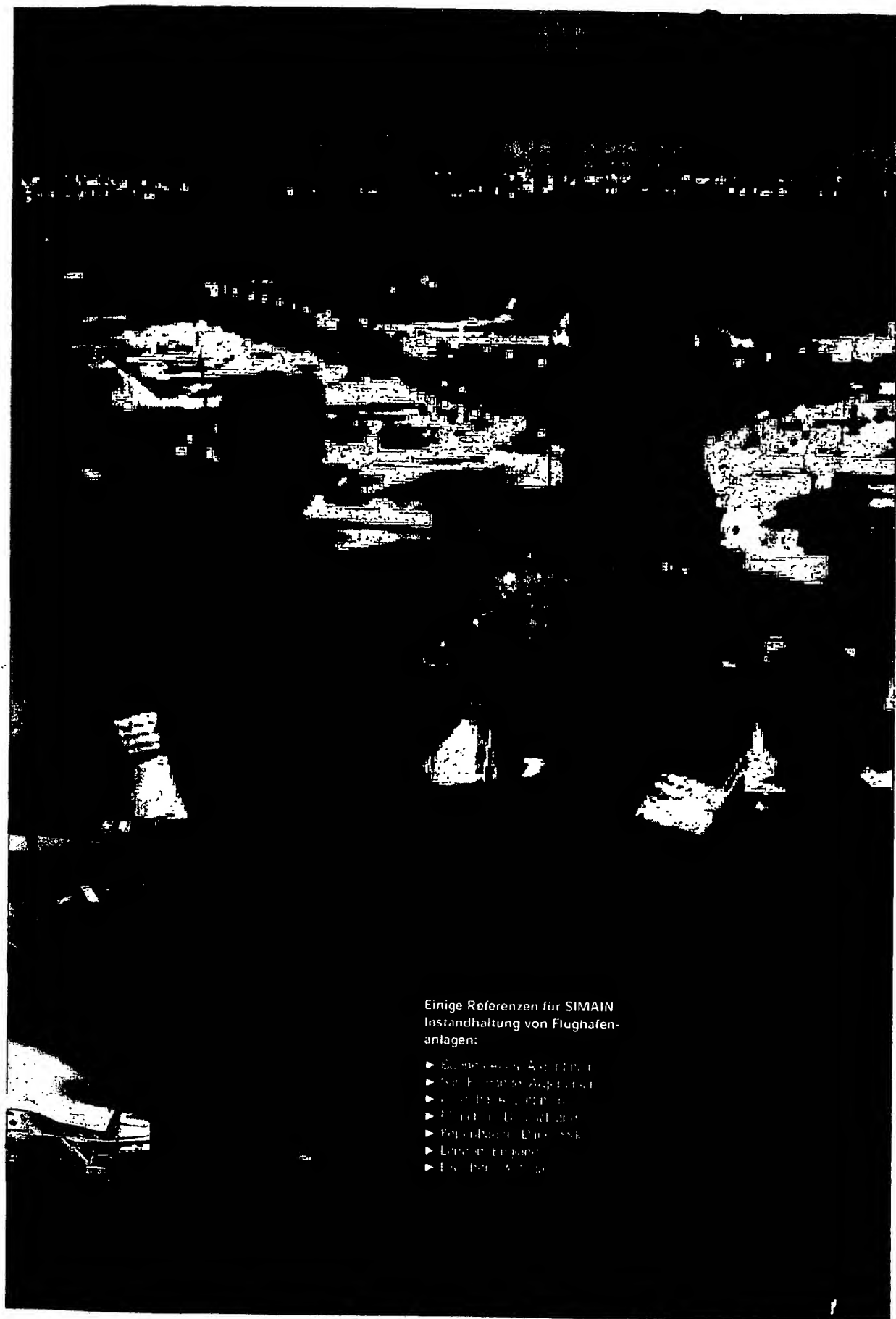
Luftseitige Anlagenkomponenten:

- ▷ Vorfeldausrüstung
 - 400 Hz
 - Befehlsanlage
 - Bodenstromversorgung
 - Andockeinrichtung
- ▷ Bodenradar
 - Primär
 - Sekundär
 - Statistisch
- ▷ Navigationshilfen
- ▷ Flugplatzbefehlsanlage
 - Steueranlagen für Flugplatzbefehlsanlage
- ▷ Bodenbewegungs-Leitsystem mit Vorplanung

Landseitige Anlagenkomponenten:

- ▷ Elektrische Sicherheitsanlage
 - ACS-Kontrolle
 - CCTV (kabelgebundenes Fernsehen)
 - Feuermeldeanlage
 - Überprüfen von Fluggästen und Gepäck
 - Einbruchschutz
- ▷ I & C
 - PABX
 - Hörfunk und Fernsehen
 - Lautsprecheranlage
 - Anzeigesysteme für Fluginformationen
 - Datennetz
- ▷ Gebäude-Automatisierungssystem
 - Gepäcktransport
 - Eindecken
 - Gebäudeleitsystem
- ▷ Stromversorgung
 - Hochspannung
 - Niederspannung
 - Beleuchtung (Befeuerung)
 - Generator
 - Notstromversorgung
 - Dieselaggregat
 - USV
 - Energieverteilung
- ▷ Mechanische Anlagen
 - Heizung/Luftung/Klimatechnik
 - Aufzüge
 - Förderbänder
 - Feuerlöschanlagen
- ▷ Bautechnik
 - Gebäude
 - Landschaftsgestaltung (evtl. auch Innenplanung)
 - Möbel
 - Hilfseinrichtungen
 - Straßenbau





**Einige Referenzen für SIMAIN
Instandhaltung von Flughafen-
anlagen:**

- ▶ Flughafen von Almaty
- ▶ Flughafen von Astana
- ▶ Flughafen von Bishkek
- ▶ Flughafen von Dushanbe
- ▶ Flughafen von Entebbe
- ▶ Flughafen von Frankfurt
- ▶ Flughafen von Moskau

SIMAIN Instandhaltung von Schiffs- und Hafenanlagen



SIMAIN bringt die Schiffs-Instandhaltung in Fahrt

Siemens ist für Reedereien ein idealer Partner. Als global agierender Dienstleister sind wir in der Lage, mit Ihnen sowohl zentral als auch regional zusammenzuarbeiten. Die gesamte Flotte kann überall vor Ort aus einer Hand zu weltweit fest vereinbarten Konditionen betreut werden – was zu entsprechenden Kostenvorteilen führt. Alternativ kann auch projektweise oder je einzeltem Schiff oder pro Region eine Zusammenarbeit erfolgen. In jedem Fall garantiert SIMAIN die Durchführung aller Arbeiten nach international zertifizierten Qualitätsstandards.

Geprüfte Sicherheit an Bord

Maschinen, Geräte und betriebliche Anlagen unterliegen laufender Abnutzung. Sie müssen daher fachmännisch auf Funktionstüchtigkeit und Betriebssicherheit geprüft werden. Zur Vermeidung von längeren unplanmäßigen Stillstandszeiten bietet SIMAIN den regelmäßigen Check der Schiffstechnik an.

Beispiele für betreute Schiffsanlagen

- ▷ Generatoren
- ▷ Schaltanlagen/Leistungsschalter
- ▷ Powermanagement
- ▷ Überwachungsanlagen
- ▷ komplexe Automationsanlagen
- ▷ Dieselelektrische Fahranlagen
- ▷ Fernsteuerungen für Schiffs-Vortriebsanlagen
- ▷ Elektronik-Baugruppen
- ▷ Elektromaschinen aller Art
- ▷ Steuerungseinrichtungen
- ▷ Navigationssysteme

SIMAIN Hafenanlagen-Instandhaltung für kürzere Liegezeiten

Häfen stehen heute in offenem Leistungswettbewerb. Um sich durchzusetzen, benötigt man modernste computergesteuerte Anlagen, die ein vollständiges Ent- und Beladen der einlaufenden Schiffe innerhalb von Stunden gewährleisten. Eine funktionierende Infrastruktur, ein effizientes Kostenmanagement und die unbürokratische Abwicklung aller Prozesse sind weitere Voraussetzungen. SiemensIndustrialServices ist der Technische Dienstleister, mit dem Sie diese Aufgaben besser lösen können.

Wir bieten Ihnen eine

- ▷ kosteneffiziente Instandhaltung aller Hafenanlagen bzw. wichtiger Anlagenteile,
- ▷ verantwortliches Betreiben von Nebenprozessen (Energieversorgung, Management der Industrial Facilities, u.ä.) innerhalb des Hafenbetriebes zum Festpreis,
- ▷ flexible Entlastung bei personellen Bedarfsspitzen,
- ▷ komplette Übernahme der Instandhaltungsverantwortung für Anlagen zum Festpreis (d.h. SIMAIN gewährleistet Ihnen die Anlagen-Verfügbarkeit).

Beispiele für betreute Hafenanlagen

- ▷ Autokräne
- ▷ Hafenmobilkräne
- ▷ Eisenbahnkräne
- ▷ Schiffskräne
- ▷ Portalkräne (Containerkräne)
- ▷ Halbportalkräne
- ▷ Brückenkräne
- ▷ Drehkräne
- ▷ Drehwipprkräne
- ▷ Wandlaufkräne
- ▷ Lagereinrichtungen
- ▷ Generatoren
- ▷ Informationssysteme
- ▷ Kommunikationssysteme
- ▷ Transportsysteme
- ▷ Störmeldesysteme
- ▷ Intrusionsschutzanlagen
- ▷ Brandschutzanlagen

Eine Zusammenarbeit mit ortsansässigen Spezialisten sowie mit Ihrem vorhandenen Instandhaltungspersonal ist natürlich möglich.

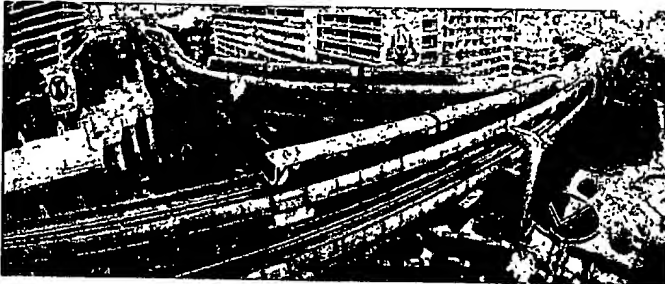


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**SIMAIN Instandhaltung von
Schiffs- und Hafenanlagen:**

- Kopenhagen, Dänemark
- Kanadische Marina, Kanada

SIMAIN Instandhaltung von Straßen- und Schienenverkehrsanlagen



Mit SIMAIN ist alles sicher geregelt

Sie suchen einen zuverlässigen Dienstleistungspartner für Ihre Infrastruktur-Verkehrs-Projekte? Einen, der hocheffiziente Instandhaltung als Kernkompetenz hat? Einen, der Stark- und Schwachstromanlagen, Automatisierungs- und Kommunikationstechnik zusammen mit allen dazugehörigen mechanischen und baulichen Gewerken abdecken kann? Als technischer Dienstleister für Infrastruktur-Verkehrsanlagen haben wir langjährige

Erfahrung in der Instandhaltung von Straßen- und Schienenverkehrslösungen weltweit. Dieses internationale Best-Practice-Know-how zählt sich auch für Sie aus. Ihr Vorteil. Für alle Gewerke und Techniken erhalten Sie herstellerübergreifend die gesamten Instandhaltungsdienstleistungen aus einer Hand. Sie werden zentral von einem Ansprechpartner betreut und brauchen sich um keine technischen Details mehr zu kümmern – wir sorgen vereinbarungsgemäß dafür, dass alles läuft. Ganz nach Ihren Anforderungen bieten wir Ihnen das Leistungspaket nach Maß.

Global und lokal stark für Sie

Als Gesamtanbieter arbeiten wir auch lokal mit ideal qualifizierten Partnern zusammen. Unsere jeweiligen Partner vor Ort kennen die regionalen Gegebenheiten und bringen dieses Wissen für Sie ein – bei der Zusammenarbeit mit weiteren Partnern, im Umgang mit zuständigen Behörden, und bei der Nutzung von guten Verbindungen. Sie schöpfen die Ressourcen optimal aus, sparen Kosten und beschleunigen Abläufe.

Wir informieren Sie gern. Mit unserem weltweiten Siemens Niederlassungsnetz haben Sie immer einen kompetenten Ansprechpartner in der Nähe.

Schienenverkehr:

Wir bieten Ihnen die komplette Palette an Instandhaltungsleistungen für alle typischen Anlagen und Facilities

- Stromversorgung
- Telekommunikation
- Signaltechnik
- SCADA
- Ticketing
- Bahnhofs-ausrüstung
- Fahrzeugmotoren
- Depot und Werkstatt
-

Straßenverkehr:

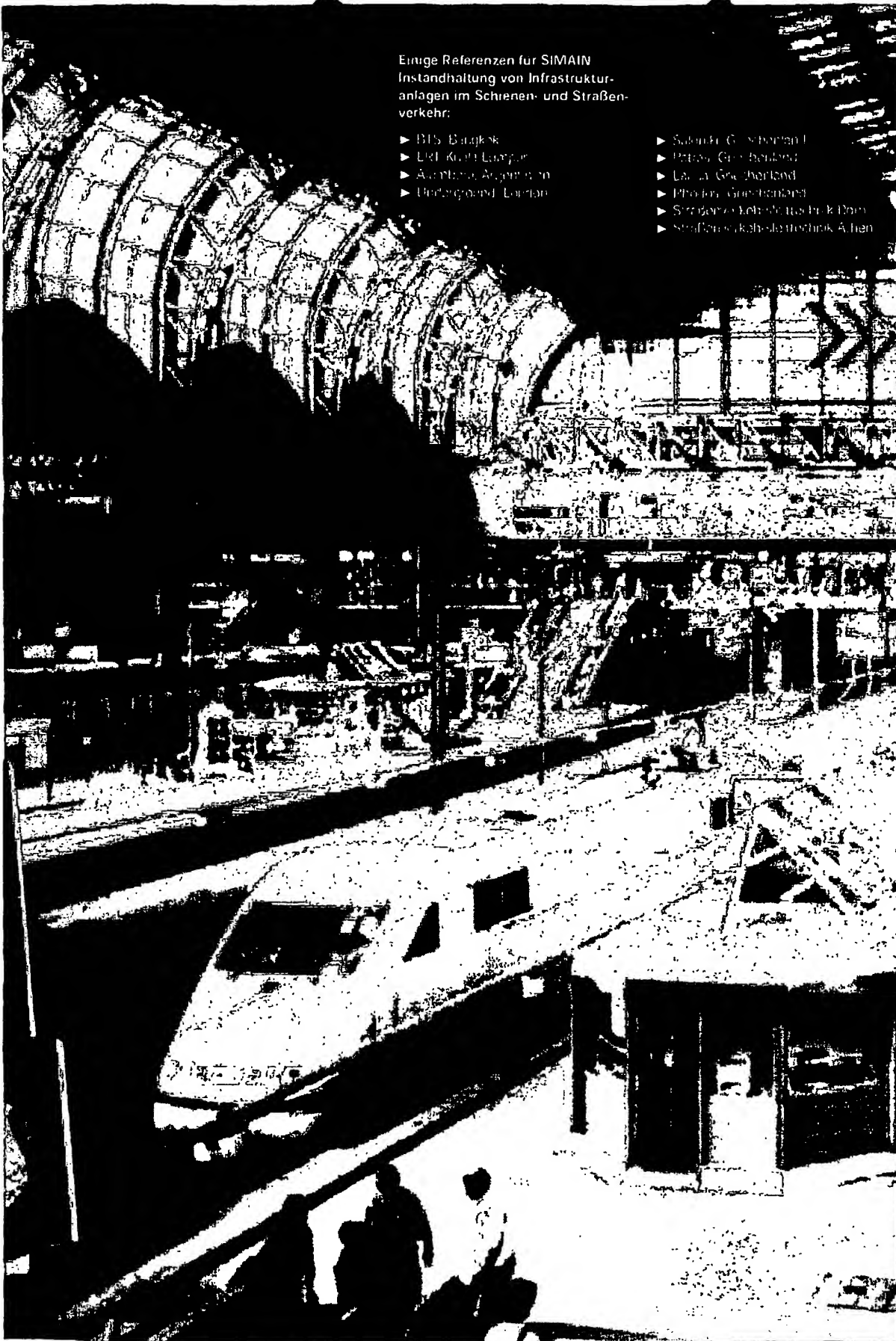
- Fahrzeugampeln
- Fußgängerampeln
- Hochmastampeln
- Blinkampeln
- Kreuzungsgeräte
- Detektoren
- Steuersysteme
- Rechner / Leitstände
-



Einige Referenzen für SIMAIN
Instandhaltung von Infrastruktur-
anlagen im Schienen- und Straßen-
verkehr:

- ▶ BTS Bangkok
- ▶ LRT Kuala Lumpur
- ▶ Aerolineas Argentinas
- ▶ Underground London

- ▶ Sabena Griechenland
- ▶ Pireos Griechenland
- ▶ Lufthansa Griechenland
- ▶ Proton Griechenland
- ▶ Straßenverkehrstechnik Athen
- ▶ Straßenverkehrstechnik Athen



Mit System zu besseren Ergebnissen



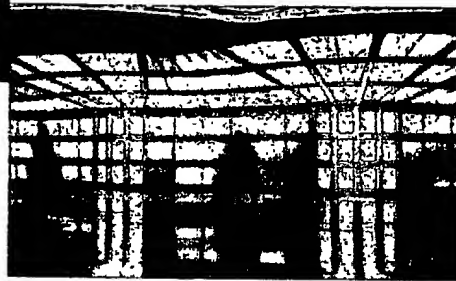
Innovative Tools für die effiziente Instandhaltung

Um die angestrebten Ergebnisse liefern zu können, läuft der SIMAIN Prozess auf Basis eines computergestützten Instandhaltungs-Management-Systems. Geschäftsplan, Instandhaltungspolitik und Optimierungsstrategie dienen als Input, der anschließend auf die vorhandenen Anlagen übertragen wird. Als Ergebnis entsteht damit der Instandhaltungsplan. Er ist die Grundlage des computergestützten Instandhaltungs-Management-Systems. Er definiert die Instandhaltungs-Aktivitäten, die Verfahren und die Häufigkeit, mit der sie ausgeführt werden, und dies für jede betreute Komponente Ihrer Anlage.

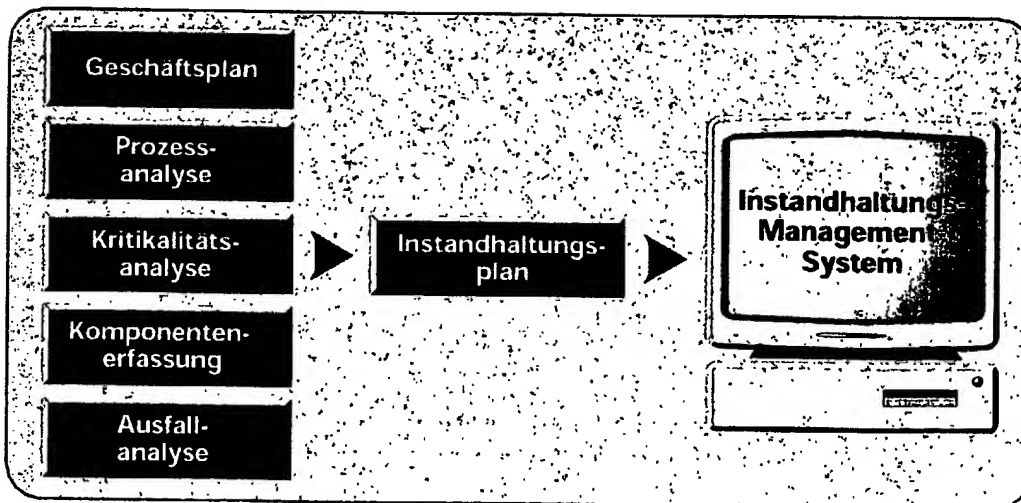
SIMAIN macht Produktivitätssteigerungen planbar

Mit SIMAIN Business Based Maintenance nutzen Sie weltweit erprobte Best-Practice-Verfahren und -Techniken für die Instandhaltung Ihrer Anlagen:

- ▶ Präventive Instandhaltung
- ▶ Hoher Grad an geplanten Maßnahmen



- ▶ Einsatz von vorausplanenden Instandhaltungstools und -systemen
- ▶ Entwicklung langfristiger Optimierungsstrategien zur Effizienzsteigerung
- ▶ Qualifiziertes, trainiertes Personal
- ▶ Kosten weitgehend planbar
- ▶ Analyse von Ausfallsursachen
- ▶ Moderne, hochentwickelte Planungssysteme
- ▶ Aussagekräftiges Bewertungs- und Berichtswesen



Ihre Zusammenarbeit mit Siemens zahlt sich mehrfach aus

1. Eine Vielzahl von Experten

Wir liefern Ihnen Best-Practice-Know-how, das wir in zahlreichen Projekten erworben haben. Zu Ihrem Vorteil setzen wir moderne Kommunikationssysteme ein, die das Expertenwissen mobilisieren, das wir in den verschiedenen Kompetenzzentren weltweit bündeln.

2. Motivierte Teams

Ausgeprägte Eigenverantwortung durch eine sehr flache Hierarchie und eine starke Kundenorientierung – für die auch unsere vereinbarten Leistungskennzahlen die Maßstäbe setzen – charakterisieren die erfolgreiche Art, mit der unsere Mitarbeiter an die gemeinsamen Aufgaben herangehen.

3. Erprobte

Instandhaltungsstrategien

Wir verfolgen bewährte Strategien, um den Wandel von der reaktiven zu einer vorausplanenden Instandhaltung zu erreichen.

4. Informationen –

die leistungssteigernden Faktoren

Ganz gleich, welches System Sie derzeit einsetzen, unser Team weiß, wie man darauf aufbauend ein Instandhaltungs-Management-System implementiert, welches das Analyse- und Berichtswesen verbessert.

5. Innovative Diagnose-Tools

Der Einsatz von zum Teil einzigartigen Messmethoden und Diagnoseverfahren ermöglicht uns, präzise festzustellen, welchen tatsächlichen Zustand Ihre Anlagen und Maschinen aufweisen.

6. Kernkompetenz

vermeidet Lernkosten

Instandhaltung ist unser Kerngeschäft. Diese Kompetenz rund um die damit verbundenen Aufgaben bedeutet für Sie Zeitgewinn bei der Einführung einer effizienteren Instandhaltung.

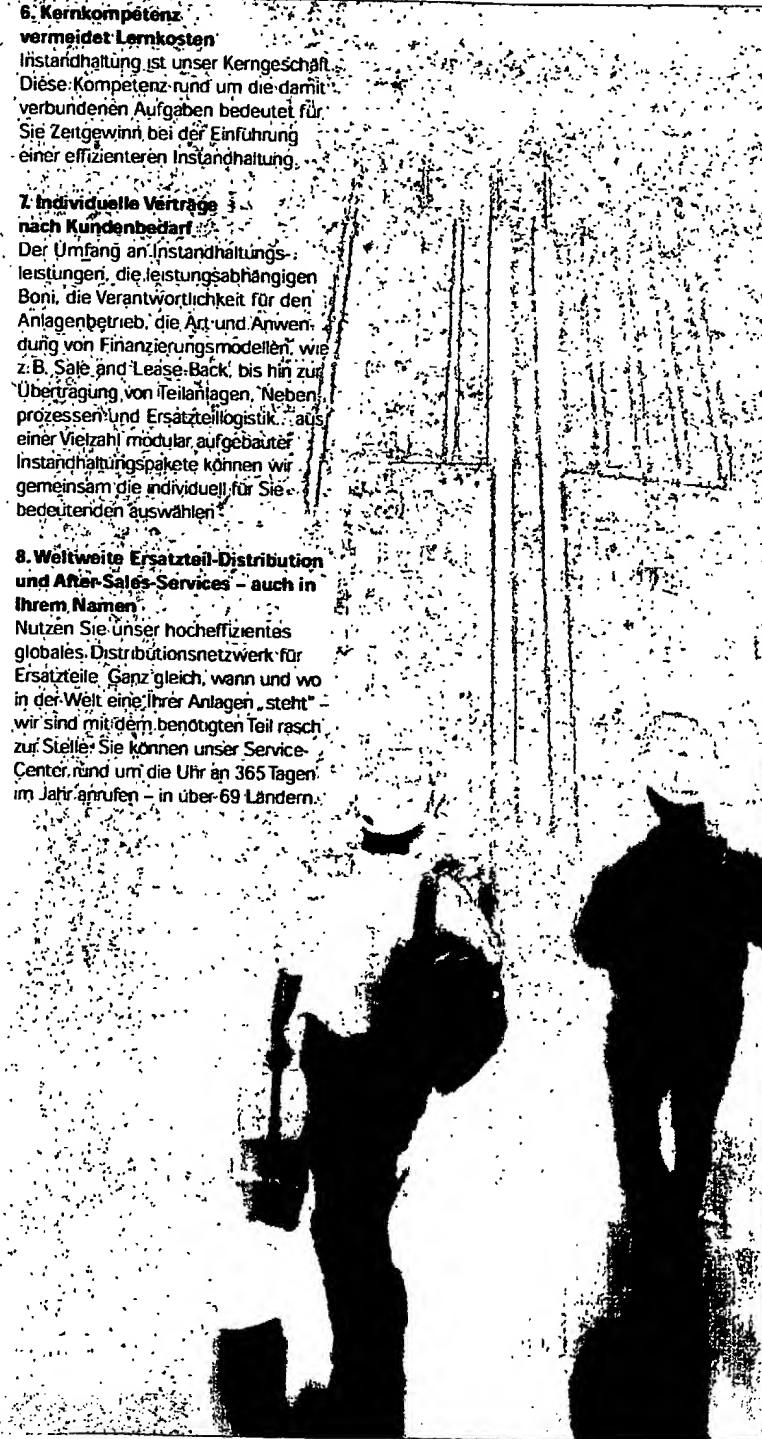
7. Individuelle Verträge

nach Kundenbedarf

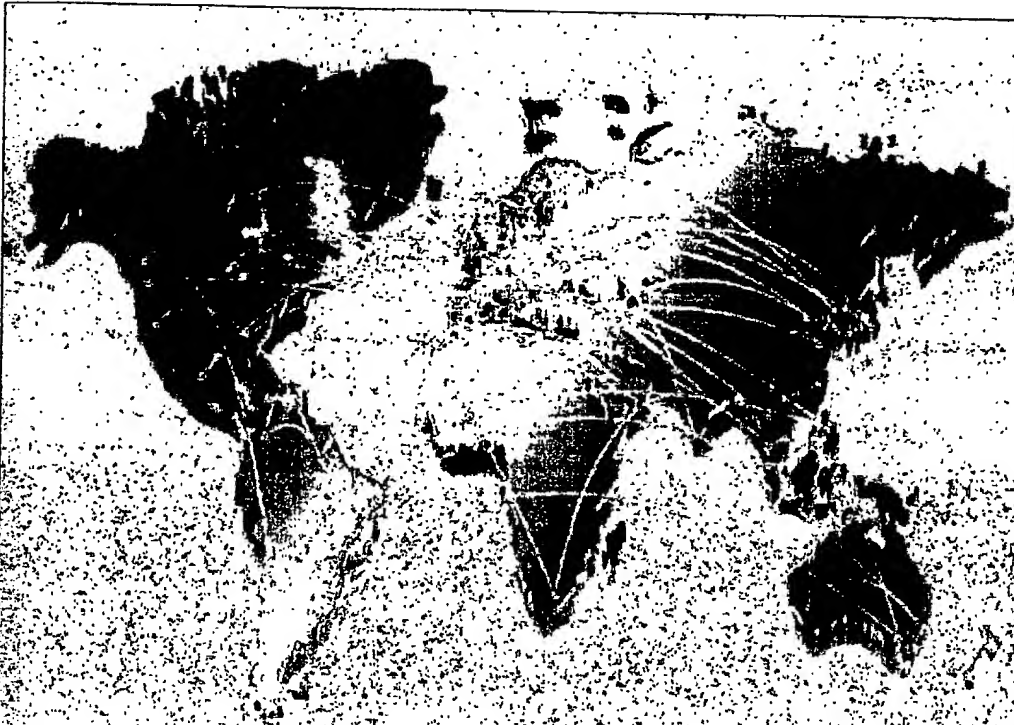
Der Umfang an Instandhaltungsleistungen, die leistungsabhängigen Boni, die Verantwortlichkeit für den Anlagenbetrieb, die Art und Anwendung von Finanzierungsmodellen, wie z. B. Sale and Lease-Back, bis hin zur Übertragung von Teilanlagen, Nebenprozessen und Ersatzteillogistik – aus einer Vielzahl modular aufgebauter Instandhaltungspakete können wir gemeinsam die individuell für Sie bedeutenden auswählen.

8. Weltweite Ersatzteil-Distribution und After-Sales-Services – auch in Ihrem Namen

Nutzen Sie unser hocheffizientes globales Distributionsnetzwerk für Ersatzteile. Ganz gleich, wann und wo in der Welt eine Ihrer Anlagen „steht“, wir sind mit dem benötigten Teil rasch zur Stelle. Sie können unser Service-Center rund um die Uhr an 365 Tagen im Jahr anrufen – in über 69 Ländern.



Weltweite Unterstützung



Lassen Sie uns über Ihre Ansprüche reden.

Wir bieten Ihnen einen Instandhaltungsservice, der individuell auf Ihr Unternehmen abgestimmt ist und jede Ihrer Anlagen und Geräte versorgt unabhängig vom Hersteller und Technologie.

Unser Instandhaltungs-Service ist ganz in Ihrer Nähe:

- ▷ 296 Niederlassungen
- ▷ 69 Länder

Fragen Sie nach weiteren SIMAIN Leistungsprofilen zu den folgenden Themen:

- ▷ Anlageninstandhaltung
- ▷ Instandhaltung von elektro-mechanischen Komponenten und Schaltanlagen
- ▷ Kraftwerkinstandhaltung
- ▷ Nebenprozess-Management

Sie wünschen weitere Informationen? Wenden Sie sich an Ihre Siemens Niederlassung vor Ort oder an die unten genannte Adresse.

Erfahren Sie mehr über uns auf unserer Homepage www.siemens.de/simain

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Siemens Aktiengesellschaft

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SIEMENS

Electro-mechanical Maintenance Consulting Services: Know-how for winners



Your business strategy should take in account the ongoing changes resulting from globalization, technical advances and increasing competition. The maintenance is an important part of this strategy. Best maintenance practice can help reduce costs, increase plant availability and improve product quality.

Maintenance becomes an investment to be optimized and not a cost to be minimized. We offer a number of industrial maintenance services, as single modules or as complete solutions including managerial and consulting services.

Services include:

- ▷ Maintenance Business Review
- ▷ Maintenance Improvement Program (MIP)
- ▷ Business Based Maintenance strategy development
- ▷ Computerized Maintenance Solutions
- ▷ Asset Condition Review

Maintenance Business Review

We use standardized procedures and assessment criteria to review and benchmark your current maintenance operation.

The review covers three main categories:

- ▷ Management responsibility
- ▷ Maintenance systems and procedures
- ▷ Personnel and resources

As many as 22 performance indicators are evaluated in detail, providing an excellent starting point for any improvement program.

Maintenance Improvement Program

Your existing maintenance department may be running well but is having difficulty finding the time to set up the improvement processes that you need to keep your business competitive. Creating an environment of change and improvement is our core business.

Based on the results of a Maintenance Business Review, we help to establish improvement programs which will cut overall long-term costs and improve reliability.

This can include:

- ▷ Aligning the maintenance strategies to your business objectives
- ▷ Improving planning and scheduling
- ▷ Optimizing workload management
- ▷ Improving utilization of a computerized maintenance management system
- ▷ Better materials management
- ▷ Establishing a training and employee development program

Siemens Industrial Services

Business Based Maintenance Strategy Development

Business Based Maintenance is a process that first defines your critical equipment and maintenance needs in terms of your business goals. The next step is to develop uniquely tailored maintenance strategies that will help you to reach your objectives. These proactive strategies complemented by modern monitoring technologies will improve your equipment reliability and thus impact the bottom line.

Asset Condition Review

Our maintenance consultants can perform an on-site audit of your equipment to evaluate:

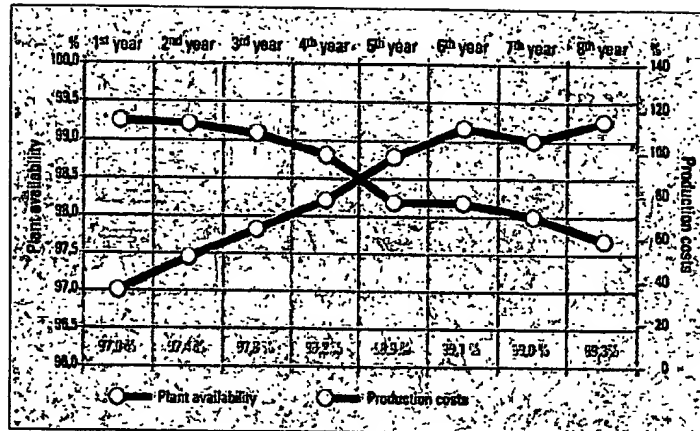
- Equipment condition
- Comprehensive preventive maintenance program
- Predictive maintenance techniques
- Expected equipment performance

We also review the factors

- Asset value
- Life expectancy
- Spares availability
- Replacement costs

Computerized Maintenance Solutions

An efficient maintenance operation uses computers to plan, schedule, and record maintenance work. The software is usually also capable of handling materials management and spare parts logistics. Crucial to the success of the computerized maintenance management system are activities such as design, selection, installation,



population and staff training. Populating it with the data from the planning phase requires a significant man-power effort. We can bring this combined maintenance and IT function to the aid of your business. Siemens specialists bring important assets to their job. These include intensive understanding of your special application and relevant industrial experience. We work hand in hand with the maintenance provider. We can deliver and implement interfaces to your Enterprise Resource Planning System (ERP), to purchasing and access control systems, to materials and document management systems, as well as condition monitoring systems.

As a result of our optimized maintenance strategy, we increase plant availability and appreciably reduce maintenance costs.



For more information contact your local Siemens office or the address below

You can learn more about us on our web page: www.siemens.com/simain

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is our goal*

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SERVTRONIC · Electronic Design & Manufacturing Services



SERVTRONIC Electronic Services



Concentration on core competences is often the best policy for many companies. That performance of essential and significant services is outsourced to external service providers. Outsourcing saves time, capital and releases resources. This is a strong partner such as SERVTRONIC. We are specialized in finding an individual solution to all your requirements relating to electronics and associated services - irrespective of whether you want to enhance your current products or embedded electronic components by optimizing the functions or if you want to minimize the introduction of new technologies.

Our service competence can bring you substantial benefits. These include:

- ▶ Development
- ▶ Design
- ▶ Procurement
- ▶ Manufacture
- ▶ Testing
- ▶ Just-in-time logistics
- ▶ Repair service



Electronic solutions of the highest caliber. We can find economic, state-of-the-art solutions for your electronic needs which are distinguished by customized individuality.

SERVTRONIC offers:

- ▶ Development/design of electronic solutions in line with your requirements
- ▶ Manufacture of electronic plug-in cards, equipment, and systems
- ▶ Tailored service packages

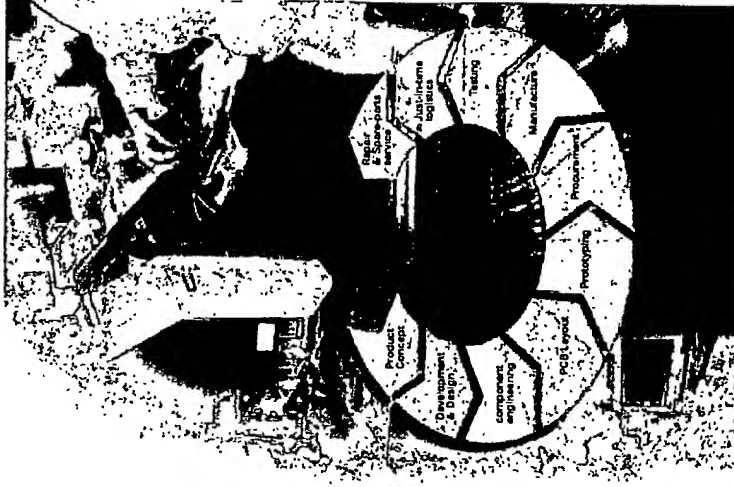
Independence of future developments as a result of a high degree of innovation.

We, in our role as your enhanced-value partner for electronics, can offer you both partial and complete solutions. Solutions which are oriented to your specific needs and built on their requirements. Our individual solutions are either cost-effective or whole scale is inadequate.

E-Mail: servtronic@t-online.de
<http://www.servtronic.com/servtronic>



Our innovative creativity, our clear commitment to a value-enhancement partnership, our mutual success prospects and our modular range of customer services accompany you on your path to new business and thus increase your profitability.



SIBRAIN · Knowledge Management



World class technical education and training
SIBRAIN is a new knowledge based service of Siemens AG, which helps your company to gain a competitive advantage by developing your employees' know-how. We individually design technical education and training programs according to the needs of our customers by using the latest methods and learning techniques.

Always up to date
Innovation cycles are becoming shorter all the time and demand for continuous training is increasing. We help you to keep your employees' know-how up to date as a huge challenge for the learning organization. Practice-oriented training and innovative learning methods are necessary for the development of your organization's know-how.

Proven training concepts for technical know-how

SIBRAIN offers you seminars, guided practical training and workshops in engineering, commissioning, maintenance and software development.

Samples of our current training program

- Maintenance management and preventive maintenance tools
- Application training for automation and drives
- Operator training

Worldwide, locally and online
SIBRAIN combines proven learning methods and innovative training methods.

Our computer based trainings (CBT) economically educate your employees by using interactive exercises and tests. They are directly related to their actual tasks.

Our online program offers an active know-how transfer - worldwide and just in time.

Benefits are

- low cost training logistics
- fast access to international data bases and information networks
- on-site coaching by experienced users

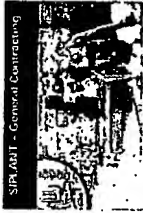








Be ahead by attending our conferences
Our conferences provide contacts, expert know-how and exchange of experiences across industries and organizational functions.
Personal know-how transfer and best practices among participants.
Meet renowned experts and learn from their years-long experience in world-class companies.

SIBRAIN - Know-how for tomorrow's world
E-Mail: sibrain@siemens.com
www.sibrain.com/sibrain



Extract from our world-wide references

 <p>SIRADIT - General Contracting</p>	<p>Plant construction in the automobile and chemical industry</p> <p>Manufacture-independent (system) engineering, project, planning, design, engineering, erection and commissioning of electrical equipment for automobile and chemical industry.</p>	<p>Plant Experience and Inherent Core Competence are:</p> <ul style="list-style-type: none"> Project planning, design, engineering, supply erection and commissioning of electrical equipment for water supply and sewage plants, plants for production of cement and lime, breweries and dairies up to and including international turnkey construction including regional capabilities. 	<p>Conversion of passenger and freight ships</p> <ul style="list-style-type: none"> Planning, design, engineering, erection and commissioning of electrical equipment for newly built and modification of existing passenger and freight ships. <p>Rectification of damage caused by fire</p> <ul style="list-style-type: none"> Emergency inspection of equipment subsequent to damage caused by fire in the paper industry and on passenger ships including supply of all necessary equipment. 	<p>Y2K compliance</p> <ul style="list-style-type: none"> Checking of a large number of components and systems from different manufacturers with respect to their Y2K compliance and summary of the results in a customer-specific analysis.
 <p>SIRADIT 722 - On-Call and Logistics Service</p>	<p>Customised service contracts for operators of port facilities</p> <ul style="list-style-type: none"> Takeover of the supply of spare parts and tools within the framework of an outsourcing project for one of the major operators of port facilities at Hamburg. 	<p>Fault elimination in the automobile industry</p> <ul style="list-style-type: none"> Extensive fault elimination services for overseas peripheral devices from different manufacturers and unknown garment car manufacturer. 	<p>Services partner for manufacturers of electronics</p> <ul style="list-style-type: none"> Sole service partner in Europe for a world-wide leading Japanese manufacturer of electronic components for medical (storage media), repair of the complex mechanical equipment, and of the control electronics. 	<p>Y2K compliance</p> <ul style="list-style-type: none"> Checking of a large number of components and systems from different manufacturers with respect to their Y2K compliance and summary of the results in a customer-specific analysis.
 <p>SIRADIM - Integral Plant Maintenance and Facility Services</p>	<p>Fault elimination for industrial plants, infrastructure and power plants</p> <ul style="list-style-type: none"> Integral plant maintenance covers both corrective maintenance of individual plant areas and also maintenance of the entire plant including all the auxiliary plants. This includes performance of electrical, mechanical and civil work on plant components. 	<p>Business Based Maintenance (BBM)</p> <ul style="list-style-type: none"> Strategy - from development of the maintenance and reducing management. References: Paper mills, power plants, automobile production plants, coal iron and copper open-pit mining, power plants in industrial plants associated with industrial plants. 	<p>Electro-mechanical maintenance</p> <ul style="list-style-type: none"> We ensure the functional integrity of electro-mechanical equipment - thinking ahead of time and oriented to reaction of the task, value to help you achieve your business objectives. Key areas are: Motors, transformers, generators, switchgear and switching plant. Maintenance for neighbouring plant areas can also be provided. 	<p>Management of selected auxiliary processes</p> <ul style="list-style-type: none"> We are specialists in industrial facility management, media supply and Logistics Services. References: Paper industry, automobile industry including the parts supply industry, water supply, congress and culture centres, e.g. Expo 99.
 <p>SIRADIM - Integral Plant Maintenance and Facility Services</p>	<p>Real-time data built in combination with ERP integration</p> <ul style="list-style-type: none"> Real-time data built in combination with ERP integration. Monitoring of existing automatic control machines in two spatially separated works in conjunction with optimisation of the production process. 	<p>ERP system communicates with the automation</p> <ul style="list-style-type: none"> Development and implementation of an all-encompassing communication concept between the ERP system and the production automation equipment. This includes the integration of the existing shop. 	<p>Industrial networks</p> <ul style="list-style-type: none"> Implementation of the network infrastructure in a number of semiconductor industries. <p>Re-engineering of refineries</p> <ul style="list-style-type: none"> Basic and detailed engineering of 3000 measuring points in a production plant using SGRAPH-CAE. 	<p>Process data in a power plant</p> <ul style="list-style-type: none"> Introduction of an information system for an entire company with 10,000 measuring points. <p>IT engineering and simulation</p> <ul style="list-style-type: none"> Automation and Distributed Control System (DCS) for 15 new high-voltage and medium-voltage switchplants in Thailand.
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SIEMENS

Electro-mechanical Maintenance Improved reliability at work

*fitness
for
plants*



SIPLANT General Contracting
SI-73 73 73 OnCall- and LogisticsService
SIMAIN Industrial Maintenance
SIT_Industry Information Technology Plant Solutions
SERVTRONIC Electronic Design & Manufacturing Services
SIBRAIN Knowledge Management

Siemens Industrial Services

INDUSTRIAL SERVICES
SOLUTIONS

*Your success
is our goal*

Partnering with Siemens is paying off every day

Your business strategy should take in account the ongoing changes resulting from globalization, technical advances and increasing competition. The maintenance function is an important part of this strategy. Best maintenance practice can help.

In developing our maintenance service programs, we drew on many years of experience and the confidence gained by excellent relations with our customers. The programs offer a broad range of maintenance services designed to provide comprehensive, vendor-independent solutions. There are a lot of really good reasons to partner with Siemens. By concentrating on your core business and partnering with Siemens you will.

- Receive professional services with predictable costs
- Increase plant availability
- Enjoy cost reductions through efficient operations and high employee motivation
- Benefit from the worldwide best-practice know-how of Siemens
- Gain more flexibility in the management and operation of your plant
- Obtain access to our strong global service network 24 hours a day, 365 days a year
- See expenses for administration and logistics reduced



We help you to reduce costs.

More than a service provider – your business partner

Our concept of Business Based Maintenance follows a comprehensive approach of results-oriented equipment management. We identify your business needs and then we develop a tailored package of services to meet the defined objectives. This process creates an efficient partnership focused on a win/win outcome.

Our commitment to your success is strengthened by performance-based contracts specifying key performance indicators such as:

- Availability
- Costs reductions
- Safety
- etc.

Sharing the profitability results in enhanced ownership – and is a key strategy for management and employee success.



Select the maintenance modules that will increase your performance

Modular services

Siemens offers a wide range of services, you select the ones that suit your maintenance needs.

1. Maintenance Consulting Services: to know what is to know how

- ▶ Maintenance Business Review
- ▶ Asset/equipment audits
- ▶ Workforce development

2. Cleaning Services: making your equipment more reliable

- ▶ Dry, moist, and wet cleaning
- ▶ Dry cleaning of HV electrical equipment on-line ≤ 36 kV
- ▶ Cleaning of switch gear, transformers, electrical and electronic equipment
- ▶ Decontamination and corrosion removal

3. Condition Monitoring Program: advance warning of problems

We use state-of-the-art methods to assess the condition of your plant and machinery:

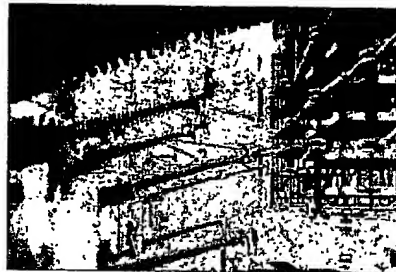
- ▶ Thermography
- ▶ Vibration measurements
- ▶ Ultrasonic testing
- ▶ Partial discharge testing
- ▶ Oil and fluid analysis
- ▶ Technical endoscopy

4. Maintenance Improvement Program (MIP)

- ▶ Implementation of a continuous improvement process
- ▶ Plant and workforce productivity program, higher skills, more flexibility, improved planning
- ▶ Definition of maintenance performance indicators
- ▶ Optimized workload management
- ▶ Better materials management
- ▶ Improved utilization of CMMS

5. Technical Support Program (TSP) and Motor Management Program (MMP)

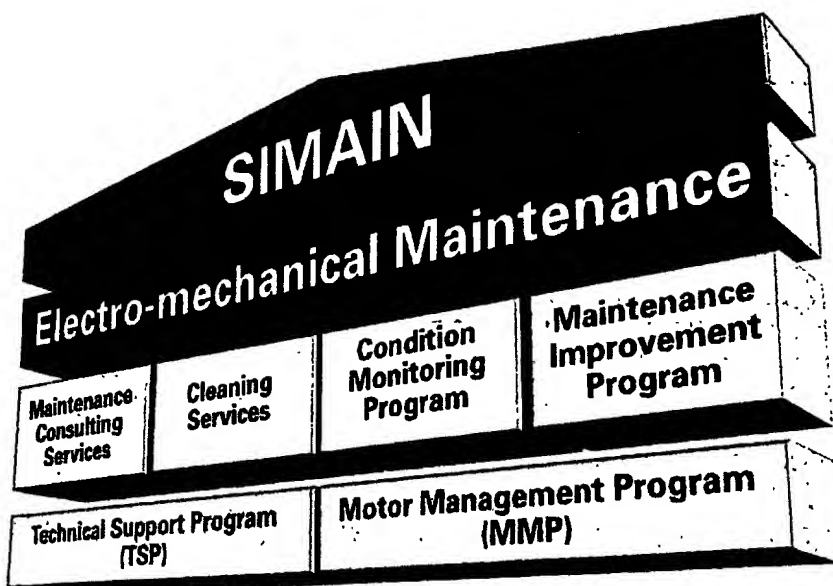
If you are aware of the benefits of improving your maintenance operation, but wary of taking on unpredictable costs, Siemens has the answer. We developed



Siemens supplies fitness for your plants. We ensure that all or a part of your electro-mechanical equipment is operational when required.

two modular service packages that let you tailor your maintenance improvements to your budget and your business objectives. Both deliver a number of benefits including:

- ▶ Reduced costs through proactive Business Based Maintenance
- ▶ Minimized downtime
- ▶ Optimized asset management & capital solutions
- ▶ Fast response when and where you need it



Exactly what you need

The objectives of these programs:

- ▶ Maximize equipment/systems reliability
- ▶ Optimize return on maintenance expenditures
- ▶ Reduce inventory investment
- ▶ Improve cost avoidance

Two types of module:

- ▶ Premium Modules are technology-oriented and cover your basic maintenance needs
- ▶ Platinum Options take you into Business Based Maintenance solutions, tuned to the special needs of your business

Technical Support Program Premium Modules

These are designed to ensure that any maintenance issues will be detected and addressed in their earliest stages. This increases reliability and availability of:

- ▶ Power generation and distribution equipment and systems
- ▶ Automations systems
- ▶ Drive systems
- ▶ Instrumentation and control systems
- ▶ Information technology systems

The result is bottom-line dollars that will drive your business.



Motor Management Program Premium Modules

- ▶ **On-site Services**
Proactive maintenance, including preventive, and predictive maintenance, planning and scheduling, and emergency response
- ▶ **Support Services**
Optimizing motor reliability with overhaul, repair, rewind, and upgrade services
- ▶ **Inventory Management Services**
Including the rationalization, optimization, storage, and maintenance of spare motors as well as a shared inventory program
- ▶ **Consulting & Engineering Services**
Including motor management assessment, motor condition reviews and reliability improvements
- ▶ **Information Management**
System design and interface and data management
- ▶ **Program Management**
Focal point for information management, improves tracking and reports performance, establishes modern workflow

The Platinum Options – moving to excellence in maintenance management

The new management services for the plant management.

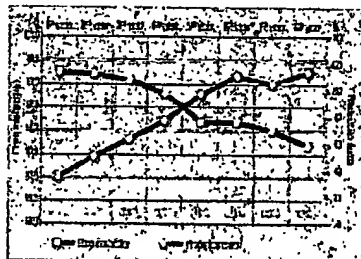
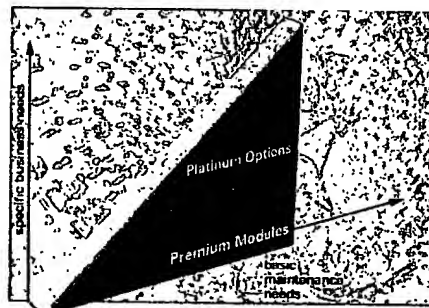
- ▶ **Capital Improvement**
Improve present state of assets to maintainable condition and project financing
- ▶ **Performance Contracting**
Independent asset review Value-added evaluation system, using Key Performance Indicators (KPIs). Regular reviews to monitor progress
- ▶ **Full Coverage**
Replacement/reduction with predictable costs. Free equipment replacement including labor over the term of the agreement

Technical Support Program specific Platinum Options

- ▶ **Reliability Focused Maintenance**
Proactive strategies, alignment to plant criticalities. Root cause failure analysis, condition based and business focused
- ▶ **Routine Operational Checks**
Monitor daily operational system parameters and review work process efficiency
- ▶ **Emergency Response Feature**
 - Two emergency calls per year
 - Customized response

Motor Management Program specific Platinum Options

- ▶ **Energy Optimization**
Complete motor system review that results in optimization recommendations with project savings



Business Based Maintenance is a process designed to impact the bottom line

Best maintenance practice

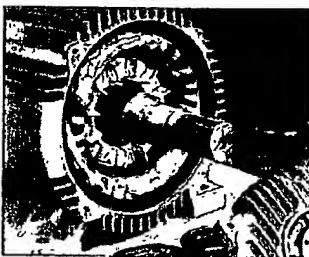
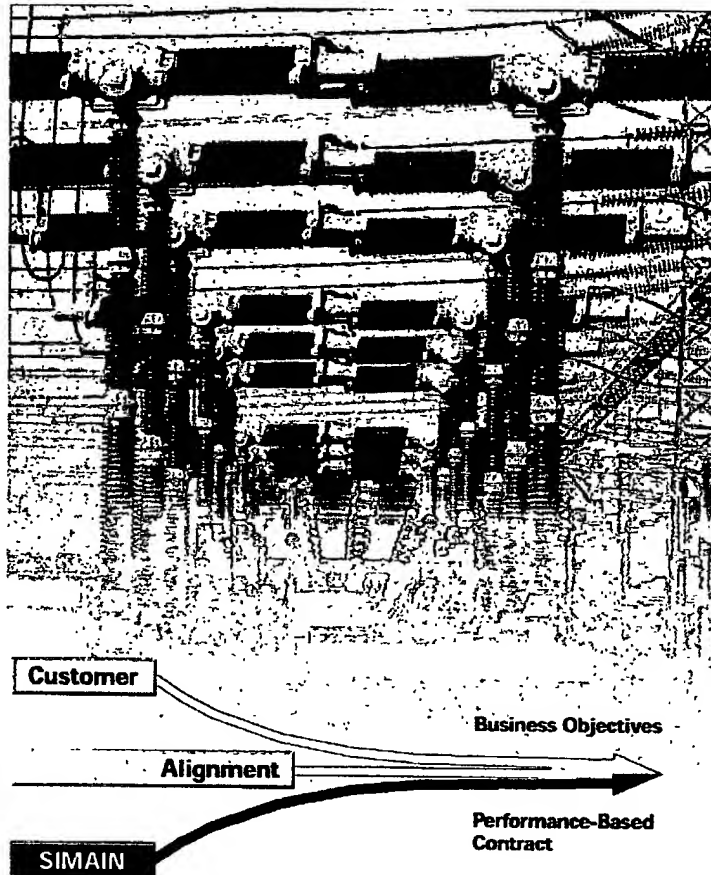
Get ahead of the competition

Increasing competitive pressure and the need to reduce costs have an impact on the entire business and drive companies to focus on their core business. As a worldwide successful partner, Siemens offers a best practice approach well fitted to your needs. By providing maintenance for electro-mechanical equipment, we can.

- ▷ Increase equipment availability and reliability
- ▷ Align maintenance to your business strategy
- ▷ Reduce your maintenance costs
- ▷ Eliminate the costs of unplanned shutdowns
- ▷ Optimize asset management

The key to high efficiency is SIMAIN Business Based Maintenance

SIMAIN Business Based Maintenance is a process that first defines your equipment and maintenance needs in terms of your business goals. The next step is to develop uniquely tailored maintenance strategies that will help you to reach your objectives. Working with your maintenance organization, our engineers and maintenance specialists assess your current situation and develop strategies based on the plant's specific requirements. Most importantly, the success of these changes will be achieved by working closely with your employees to sustain improvements.



Siemens - innovative in technical services

As a manufacturer of products, systems and plants, and as a maintenance services provider, we supply you with proven know-how, modular services and efficient systems to keep your plant fully operational and your equipment up to date. Our services are vendor independent.

Discover the better alternative for electro-mechanical maintenance



Let's discuss your needs:

We can provide customized maintenance services for your business, covering every type of plant and equipment irrespective of the manufacturer or technology.

For more information contact your local Siemens office or the address below

You can learn more about us on our web page: www.siemens.com/simain

Our maintenance services are just a phone call away:

- ▷ 296 locations
- ▷ 69 countries

Please ask for the other SIMAIN service profiles on the following topics:

- ▷ Auxiliary process management
- ▷ Integral plant maintenance
- ▷ Maintenance for infrastructure installations
- ▷ Power plant maintenance

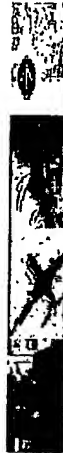
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Think global, act local
with an international partner Siemens

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